Sneak Peeks: OS X and Photoshop 6

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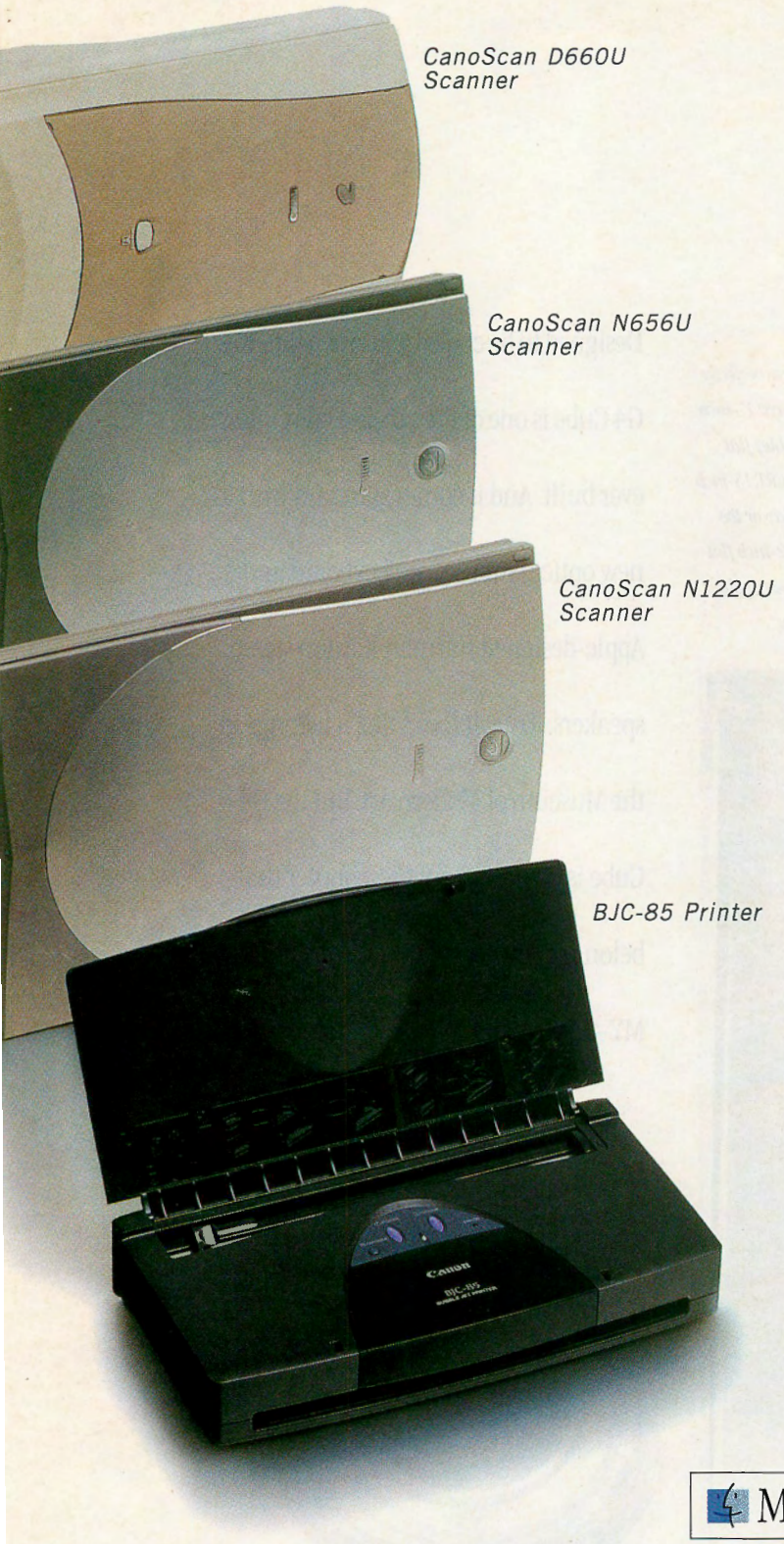

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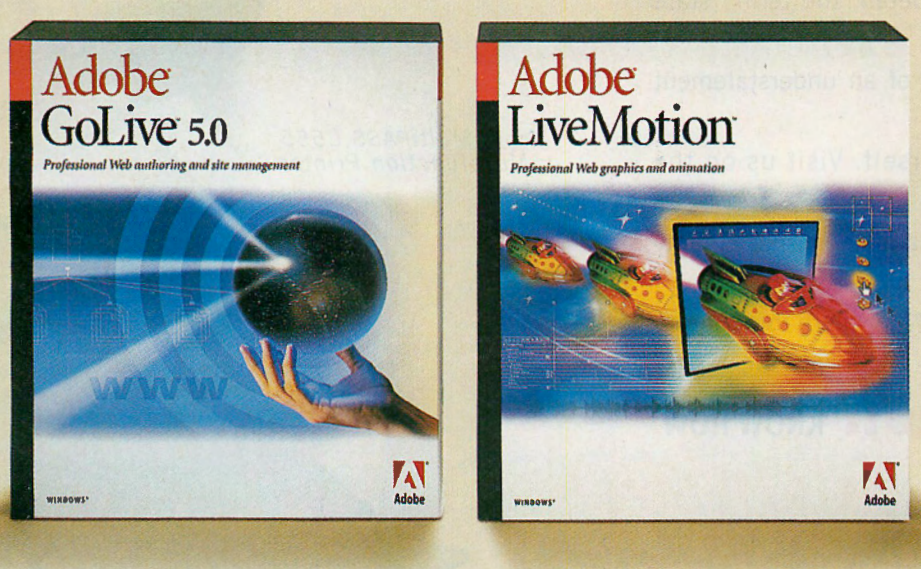

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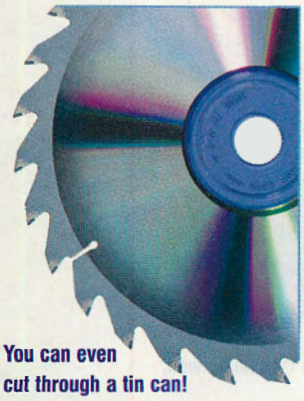
by David Reynolds



You can even cut through a tin can!

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Watch out, Harlem Globetrotters!

Photographer Joyce Oudkerk Pool gave us the power for our November cover.

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Oh, it's you, Mr. Jobs. You gotta stop coming to work this way.

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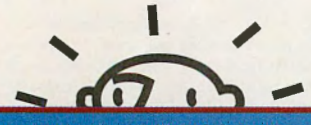
It's all about making jokes at each others' expense, you know—we leave making fun of us to you. Oh, and to Rob.



What the heck is an iBorg? Just one more level of Diablo, please. Dave Ross—earthquake proof. It's the East Bay vs. the City Slickers! So many Rob_Cs, only 1 Cube_Dawg!

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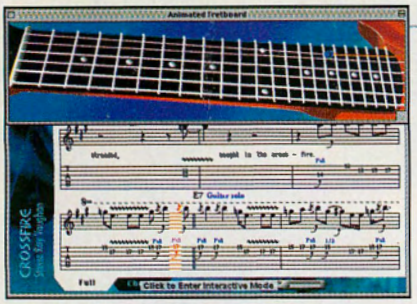
november's power highlights



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eMedia Product Line Demo

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Cannon Zero

You've seen these games before: Artillery, Super Artillery, Tank Wars...the names go on. But Cannon Zero is da bomb (silly pun completely intended). With wonderfully rendered 3D models and scenes, as well as realistically animated pyrotechnics, this incarnation of Artillery takes the classic to a whole new level. You gotta play it to believe it. And it gets better—Cannon Zero is free and open-source. See how a seemingly simple concept can go to extremes.

Deus Ex Demo

C'mon, you *know* what this is. Do you really need to read any further? Civilization is near collapse, the world economy is in chaos, and terrorism runs rampant. It's your job as J.C. Denton to right the wrongs. This game probably has the most engaging plots out there—every turn you make and every action you take affects the course of gameplay. The demo starts in training mode, then goes into level one. Give saving the world a go.

Unless you have cyberattachments, nerves of steel, and the will to save the world, I wouldn't go down that alley.

We were testing how to make something out of nothing. See what happens when you take a dry tutorial and add a little commentary here and there. This month's staff movie: "Non Sequitur."

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editor's note

Sticks, stones, words...whatever it takes.

September brings two new toys to Mac enthusiasts, each one sensational in its own way. The most obvious is the public beta version of Mac OS X, which, according to Apple, will ship on September 13. The day before that, however, those of us who follow the trials and tribulations of all things Apple will feast on *Vanity Fair* contributing editor Alan Deutschman's supposed hatchet job of Steve Jobs, titled *The Second Coming of Steve Jobs*. If you're out of the loop, the book already caused a small stir when, amid rumors of Steve Jobs's intervention, *Vanity Fair* yanked an excerpt it was planning to run. The magazine claims it cancelled the excerpt due to lack of space (after all, you can only squeeze so much into 458 pages), and not at the request of the book's subject. The Steve-is-out-to-sink-the-book paranoia picked up even more steam when it was reported that Steve Jobs personally called *Second Coming* publisher Random House, allegedly to complain about his unfair treatment in the book.

I recently finished reading an advance copy of *The Second Coming*, and it paints a portrait of Steve Jobs as the visionary that every man wants to be and every woman wants to be *with*. If this counts as character assassination, then sign me up as the subject of a hatchet job any day.

> ...the new G4 Cube represents the archetypal Steve Jobs computer.

The book follows the Steve Jobs saga from the time when Apple originally kicked him out to the present. It's absolutely fascinating to read about the origins of Pixar and the tumultuous rise and fall of NeXT. The book does come down pretty hard on some of Steve's family matters, and makes it clear that he can act like a big jerk to his employees, but the stories in Deutschman's book seem mild compared with the folklore that already engulfs the man.

One thing the book made me realize, however (aside from the fact that I really, really want to be mega-rich), is that the new G4 Cube represents the archetypal Steve Jobs computer. As Deutschman puts it, Steve always wanted to make a computer equivalent of a Porsche: finely engineered,

Rob no longer has hair on his chinny chin chin.

absolutely beautiful to behold, and highly sophisticated. The Cube features the minimalist esthetics Jobs has always lived by, and it's priced for the masses, another credo in the Steve Jobs philosophy. The final piece of the puzzle will fall into place when OS X hits and you can finally run Steve's OS on Steve's Cube. After reading *The Second Coming* you can really see that Steve has at last created the kind of computer he's wanted to make since he finished the original Mac. It makes you kind of happy for the guy.

As for the other new toy, OS X, the beta should be available by the time you read this, as we like to say here at *MacAddict*. Well, how do you like it? Is it everything you hoped for? Probably not. We'll have a new, modern, absolutely foreign operating system to play with, but OS X's true *usefulness*, by almost any definition of the word, still lies a ways off. Apple has to get the bugs out, software makers have to Carbon-ize, and you, the user, have to get used to the OS and buy Carbon-ized software. Only then will we have our new system.

That's not to say you won't get a couple of neat goodies before the shakedown's done, however. Converted Unix apps will be among the first trinkets. We should have MP3 streaming software, databases, and even a few Unix graphics tools right away. And since we know you're just itching to finally do *something* with OS X, we've built a special OS X site on MacAddict.com so you can keep track of the latest downloads and info—check out www.macaddict.com/macosx. Those of you fascinated with both the man and the machine should have a lot to chew on right now, so don't waste too much time reading editor's notes.

Staff Rants

Niko Coucouvanis

MacAddict.com Producer, Jägermeister Quartermaster

Q. *If someone wrote a book about you, what dirt would they uncover?*

A. Absolutely nothing. Unless you count that pomo thing in the early eighties.

Q. *If you were going to write a hatchet job about someone else on staff, who would it be?*

A. [Managing Editor] JenMo. Definitely JenMo. She does that prim and proper thing pretty good, but I don't buy it for a second.

David Reynolds

Executive Editor, Jen Morgan "Friend"

Q. *If someone wrote a book about you, what dirt would they uncover?*

A. I once assassinated the Archduke Ferdinand, but...wait. That wasn't me. Instead, they'd find out about the time I got arrested for illegal hot tubbing.

Q. *If you were going to write a hatchet job about someone else on staff, who would it be?*

A. [Managing Editor] Jenifer Morgan. She's so squeaky clean—there must be something under that!

Cathy Lu

Features Editor, Birthday Girl

Q. *If someone wrote a book about you, what dirt would they uncover?*

A. That I once tried to make this girl eat a piece of green soap by covering it in chocolate and passing it off as a chocolate mint. I was ten, okay?

Q. *If you were going to write a hatchet job about someone else on staff, who would it be?*

A. David Ross. I think there's much more to his former life than what he says. Clothing designer. Whatever.

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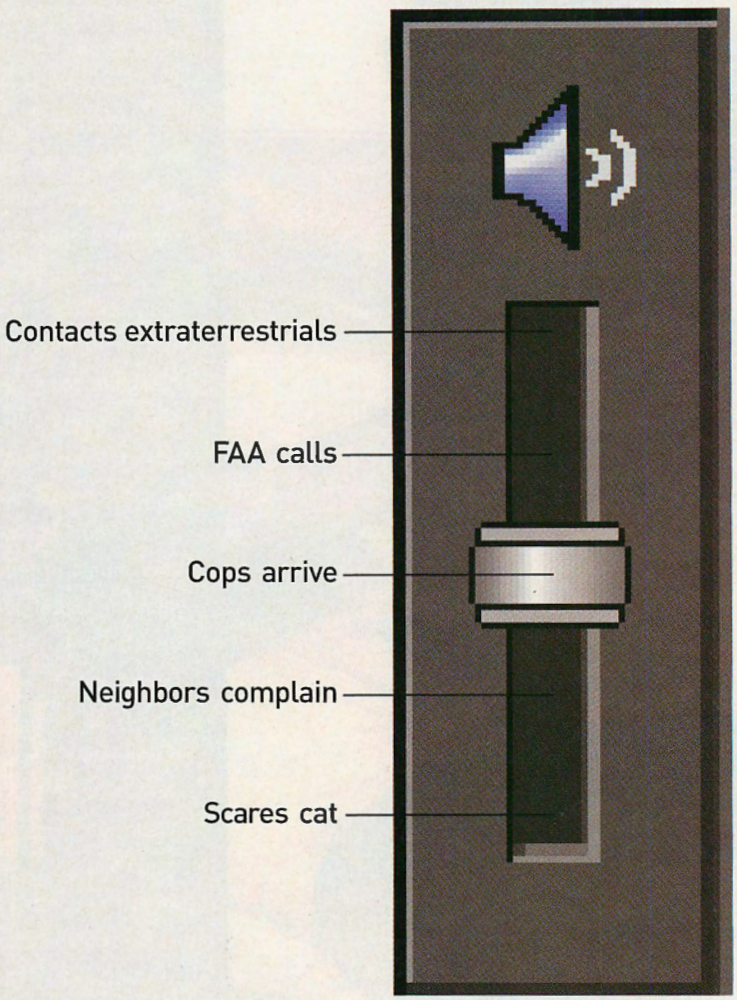

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Letters

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DON'T YOU KNOW STEVE JOBS AND BILL GATES TRAVEL THROUGH TIME DOING BATTLE?

You guys probably know this by now, but on page 32 of your September 2000 issue ("Five Smart Moves Apple Can Make"), David Reynolds details five ways Apple could improve its standing in the computer market. It seems like they half-read David's thoughts. Of course, we all know by now about the multiprocessor 450- and 500-megahertz G4s (second on the list) and the new Pro Optical Mouse and Pro Keyboard, which were fourth on the list. Though these coincidences easily could be explained by logic, I personally believe that someone at Apple went into the future, bought the September issue, then traveled back in time to a few months before Macworld Expo NYC, so Apple could at least partially fulfill the wishes of us loyal Mac users.
—J. Grybowski

Recently Sighted

This is an old IIci with a Quadra 650 motherboard I put together for my Dad who retired from the Marine Corps a few years ago. I figured the camouflage scheme would make it more user friendly!*—William H. Frizell IV*

Another "decorated" Mac.

ILLUSTRATION BY DAVID "DUKAKIS" ROSS

A vote for me is a vote for two Macs in every office and...Hey! Keep that intern away from me!

DEVILISH GOOD LOOKS?

I've been giving this a lot of thought lately and I'm pretty sure that between the stupidity of George W. and, well...the stupidity of Al Gore, Max should run for president. He's a real man, or at least the closest thing to a man in this election. He could laugh in the face of all those petty special interest groups because he'd have the backing of the entire Mac community. I'm sure his devilish good looks could win him some outside votes, too. I mean, come on, look at that face! Would someone that cute lie? But really, good looks aside, Max is more than just an image. He's young and active, sarcastic and witty. He could really help the misguided, PC-using youth. I say: Max for the Mac party! Who's gonna bring the banners and nifty party pins? Can we have the convention at your place?*— Ed Adams*

YOU MAY

May I offer my sincere thanks for the clear, step-by-step how-to, "Share Your USB Printer" (Sep/00, p82) by David Reynolds. I had absolutely no trouble with the process and am now the happy beneficiary of a shared printer. This new subscriber sends an enthusiastic, "Keep it coming!"*—Mary Johnson*

DO YOU KNOW SEVEN OF NINE PERSONALLY?

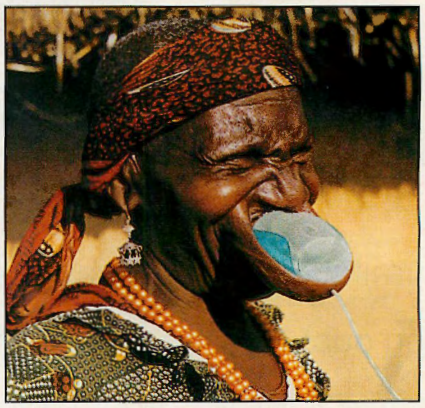
Just a quick note to say thanks for printing my illustration in the article about Eric Chauvin ("Secrets of the Pros," Aug/00, p56). Not only is Eric a great guy (and extremely talented in turning many of my illustrations into matte paintings), but I've thoroughly enjoyed reading *MacAddict* since issue 1.*—Tim Earls, Set Designer for Star Trek Voyager*

ORSON WELLS?

Who is the person holding the camera on the cover of the September 2000 CD?
—Ted Rogers
That lady is Shirley MacLaine. The Photo comes from the Corbis Archive—Ed.

WELL, WE WEATHERED THAT WAIT

An article in your September issue mentioned that there was no wireless home weather station for the Mac ("Five PC Toys We Want," p30). In fact, one does exist at www.online-catalog.com/cgi-bin/SoftCart.exe/gizmos/html/wx_menu.html?E+gizmos.
—Sarah Swanson



I've finally discovered a use for that round Apple mouse.*—Stefan Hansen*

FOUR OUT OF FIVE JASON WHONGS AGREE

You might want to tell Chris Imlay that his theoretical choice of eating a tarantula instead of a gallon of cockroaches is the way to go (The Disc, Sept/00, Staff Video). If he could cook it, he would find they taste okay. Spiders are related to lobsters and crabs and, when cooked, taste very much like them. I ate a tarantula on a dare during a hunting trip to Arizona about five years ago. My hunting partners and I had watched a Discovery Channel movie (or maybe a National Geographic program) earlier that year where the South American natives thought tarantulas were very good eating. *—Kirk Mueller*

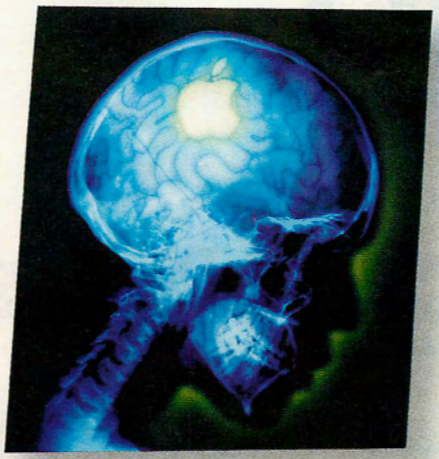
TANKED

One fine day on a summer afternoon, I noticed that if you spell Mac OS backward, it says sohsotnicam. We must ask ourselves, is this a new trend? Is this part of Woz's secret plans? Am I drunk? *—K "MaXintosh, the new OS" Colson*

MAC TOTEM

Check out what I've got lurking in my dining room! I made it last winter, and I've been trying to figure out how to introduce it to Apple without risking a cease-and-desist order. It would look so nice in the big white atrium at Apple headquarters—the place could use a homey touch. So whaddya think?*—Samantha Lynn*

Oh, yeah? Well, we have a Mac igloo!



Apparently, this guy's cracked his noggin.

THAT'LL TEACH HIM TO THINK DIFFERENT

I bet you didn't know that the owner of that X-ray on the cover of your September 2000 issue has a fractured skull; a Parieto-Occipital fracture, to be specific. Is that one of those PC folks for which you advocated a beating about the head and shoulders 'til they saw the light? Well, it appears that you got your point across!*—Charles Cusumano, Physician Assistant Certified/Family Medicine Practitioner*

LIMBAUGH ROCKS!

I was sitting back, listening to my Rush: A Farewell to Kings album, when I came across a section titled "A Farewell to Fonts" in your 17-Point Mac Maintenance article (Sep/00, p45). I am happy you have finally given some reference to this band of Mac users. Well, I'm off to listen to some more Rush.*—Dan Bisti*

OK, BUT JUST ONCE

Can I please be in the magazine? There, it's out of my system now.*—Joe Granville*

SOUNDS LIKE A STICKY SITUATION

What?! You mean the Mac doesn't dispense soft-serve ice cream? ("The Do's and Don'ts of Advocacy," Sep/00, p29) Well, then perhaps it's best if we don't discuss the ingredients I've been pouring into my Zip drive the past few months. (No wonder the "ready" light never came on!)*—Mike Suchcicki*

OUCH

A guy at work said he read that the number one burger franchise out there is also the world's largest buyer of cattle eyes. Does that make you wonder or what? I can see it now—they can come out with a new burger called the Eye-Mac! Oh, wait—no, that won't work.*—J. Lakas*

THEY SEE A LOT OF GROWTH POTENTIAL IN THAT AREA

Based on the recent wave of viruses unleashed on the Web, Microsoft has decided to group Outlook Express with Word and name the bundle Microsoft Petri Dish. Macintosh versions are not planned. *—Tristan Brown*

PERHAPS YOU'RE MISSING THE POINT

No, not a "large" grain of salt ("Taking Yourself Too Seriously Warning," Sep/00, p32).

Taking something "with a grain of salt" says that a grain is sufficient to season it. If you feel the need to bend the expression for emphasis, you should go toward *smaller* amounts of seasoning.

Better still, don't bend expressions unless you understand them. *—Joe Brown*

THRILLING THROBBERS

I noticed your magazine featured a question about Explorer throbbers (*Ask Us,* Sep/00, p90). I thought I should tell you about www.pkelleher.com. There're a whole bunch of cool throbbers for iCab, Explorer, Netscape, and Mozilla at this site.*—Micah Lanier*

Contact Conduct

We get a slew of letters every month here at *MacAddict* (we're talking *dozens*), and while we love to hear from our readers, we'd like to make a couple of requests that will help us out. First, if you want us to consider your letter for publication please include your full name and an email address with your letter. Second, please make sure you send your missive to the correct address. To help you with the latter, here are the best ways to reach *MacAddict*:

If you have a comment on the magazine:
letters@macaddict.com
If you have a comment on the Web site:
webmaster@macaddict.com
To ask a technical question:
askus@macaddict.com
If you're a shareware author and would like us to consider your wares for The Disc:
submissions@macaddict.com
If you have CD problems:
http://support.imaginemedia.com
If you have a question about subscriptions:
custserv@macaddict.com

As always, feedback is greatly appreciated.*—RC*

The New Tricks of Photoshop 6

Another pile of features on the way

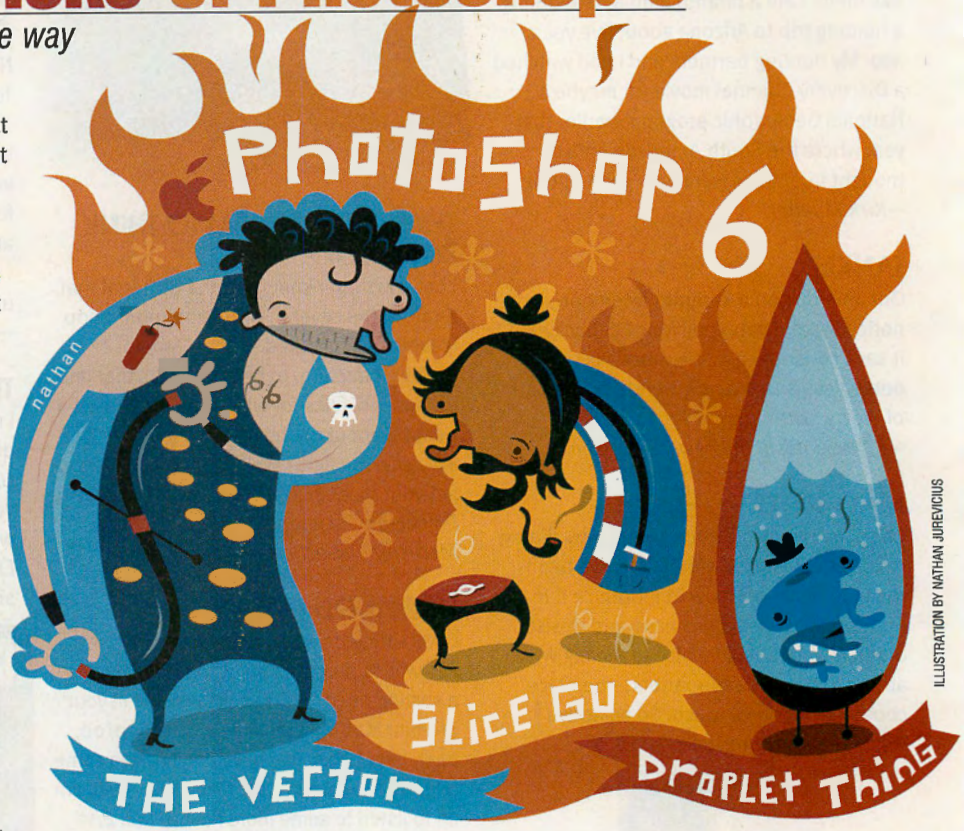


ILLUSTRATION BY NATHAN JUREVICIUS

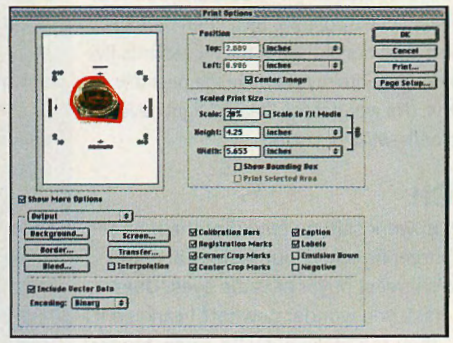
Photoshop has dominated the raster-graphics field for so long that it's getting hard to remember that it even *is* a class of software, or that several software packages used to compete for dominance in the field. (Deneba's all-in-one Canvas package is pretty much Photoshop's only remaining serious competitor, now that Silicon Beach Software and Ann Arbor Softworks have both vanished.) In a bid to keep that dominance alive, Adobe has just unveiled Photoshop 6.

Almost unbelievably, Adobe found several bells and whistles it hadn't already put in Photoshop 5.5. Many of the new features feel a bit like pared-down versions of Illustrator features–you can create and manipulate vector-based objects, exercise fine control over text settings, and create and apply styles to objects and layers. While the new features wouldn't exactly make you want to ditch Illustrator or FreeHand, they're good enough for a lot of minor tasks that would currently require a trip to a vector application. The text tools deserve special mention; Adobe has finally answered complaints about Photoshop's limited text-handling capabilities. Illustrator users should find the new Character and Paragraph palettes very familiar–Adobe appears to have simply borrowed parts of Illustrator's text engine for Photoshop use.

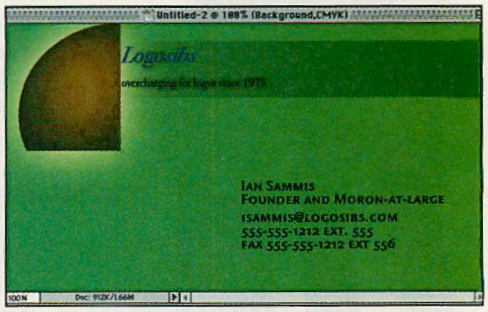
Adobe also added the now-obligatory stock of new Web tools. Photoshop 6 can handle slicing up Web graphics directly, rather than demanding a trip to ImageReady. Better yet, you can save the slice sets and specify rollover effects, again directly within Photoshop. You can also use the new Rectangle, Ellipse, Rounded Rectangle, and Polygon tools to specify complex image maps within Photoshop.

Adobe has made so many other tweaks that we can't list them all—among them you'll find an improved Extract tool, a way to export actions as drag-and-drop applications called *droplets*, extensions to the TIFF format that let you retain layers when saving a TIFF file without sacrificing compatibility, and a Liquify command in the style of Kai's Power

If you're still not tired of distorting images, Photoshop now has that ability built in.



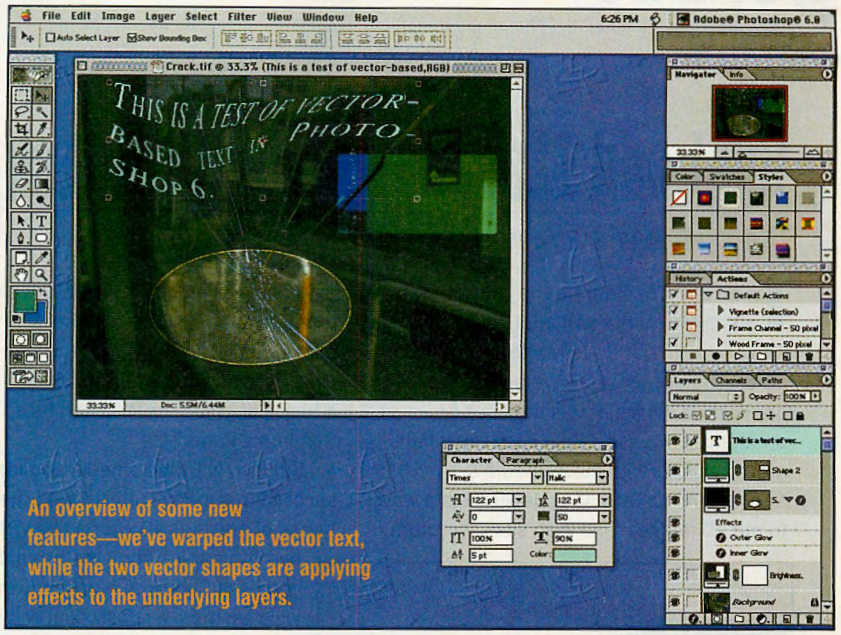
At long, long last, Photoshop gives you a print preview instead of just cheerfully warning you that it'll clip something.



Making this business card taught us two things: Photoshop's Vector tools, while very cool, are no substitute for Illustrator, and *MacAddict* editors, while very cool, are no substitute for artists.

Goo. In the significantly revamped user interface, the Options palette has become a tool bar spanning the top of the interface, where you can dock other palettes. Best of all, a new Print Preview mechanism finally gives you more sensible feedback than the familiar "Some clipping will occur" error message. Stay tuned for a full review of Photoshop 6 when we receive a final version.—*IS*

Photoshop now comes with a small but extensible library of vector shapes, like this footprint.



An overview of some new features—we've warped the vector text, while the two vector shapes are applying effects to the underlying layers.

OS X Public Beta Arrives

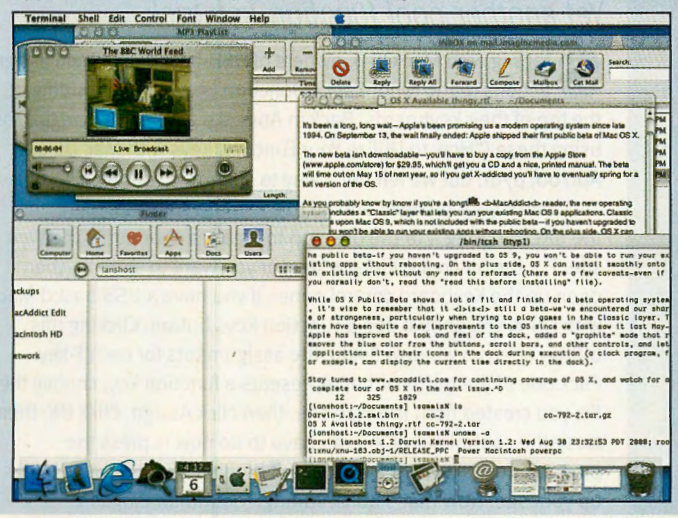
The Unix has landed

It's been a long, long wait—Apple's been promising us a modern operating system since late 1994. On September 13, the wait finally ended: Apple shipped their first public beta of Mac OS X.

The new beta isn't downloadable—you'll have to buy a copy from the Apple Store (www.apple.com/store) for $29.95, which'll get you a CD and a nice, printed manual. The beta will expire on May 15 of next year, so if you get X-addicted you eventually will have to spring for a full version of the OS when it becomes available "early next year."

As you probably know by now if you're a dedicated *MacAddict* reader, the new operating system includes a Classic layer that lets you run your existing Mac OS applications. Classic depends on Mac OS 9, which is not included with the public beta. If you haven't upgraded to OS 9, you won't be able to run your existing apps in OS X. On the plus side, you can install OS X easily on any Macintosh that shipped with a G3 or G4 processor (except for the first-generation PowerBook G3) without any need to reformat, as OS X can coexist with a previous Mac OS variant on a single drive. An improved version of the Startup Disk control panel lets you easily choose which system will appear after a reboot. Running one OS on another takes quite a bit of memory—Apple recommends at least 128MB of RAM.

While OS X Public Beta shows a lot of fit and finish for a beta operating system, it's wise to remember that it *is* still a beta, and hasn't quite evolved into the paragon of stability we're hoping to see. There have been quite a few improvements to the OS since we last saw it last May—Apple has improved the look and feel of the dock, and has added a graphite mode that removes the blue color from the buttons, scroll bars, and other controls. In addition, application icons can alter their appearance in the dock during execution (a clock program, for example, can display the current time directly in the dock).



The public beta is here and it's looking pretty good!

For some applications, OS X won't work well at all—games, in particular, tend to run extremely poorly in the Classic layer. The Classic layer has extremely limited hardware access, meaning Mac OS games can't use graphics acceleration. If you haven't bought any games since late 1996, this won't be a problem—otherwise, expect to boot into an older Mac OS variant whenever you feel the urge to frag.

Hardware support will also be highly questionable until vendors port their drivers (peripheral drivers do not work inside Classic). For productivity apps and particularly for servers, the OS X public beta should be more than adequate. A host of useful apps accompany the beta, including OS X native versions of Internet Explorer and StuffIt Expander, a PPP connection utility, the inevitable calculator, a PDF compositor that lets you play with OS X's powerful graphics model, a picture viewer, a chess game, and an attractive new version of the QuickTime MoviePlayer. Watch for a complete tour of OS X in the next issue.—*IS*

Visit www.macaddict.com for late-breaking Mac OS X news.

Intel and Macromedia's 3D Attack

The Web gains a new dimension

In an effort to saturate the Internet with 3D, Macromedia and Intel have climbed into bed together to deliver low-bandwidth 3D technology to Web developers. The application, which at this time has no announced release date, will marry Intel's 3D technology with Macromedia's Shockwave player, giving developers a way to put 3D images onto Web sites. According to Miriam Geller, Macromedia's senior product manager for the Shockwave player, the technology aims to "take what right now has been somewhat of a trickle of 3D on the Web and turn that into a flood."

But how will Macromedia and Intel succeed in a market littered with the bones of previous 3D efforts like VRML? The two companies hope the 140 million copies of Shockwave currently in use will give them a substantial established market. On top of that, the new Intel-developed technology takes advantage of the end user's processing power—rather than relying on bandwidth—to deliver polygon-hungry 3D. It does this by sending a low-polygon model, together with information that lets quick machines subdivide those polygons to create more-realistic models. That means 3D on the Web can look decent without extending download times.

One of the biggest uses of this technology will be in e-commerce, as it gives shoppers the ability to look at—and interact with—the items they're ogling in 3D. Macromedia and Intel are going squarely after the same market MetaCreations is targeting with its Metastream technology. But according to Geller, Intel's technology one-ups Metastream in two areas: The new technology is designed for more uses than just e-commerce, and Shockwave has a broader installed base than Metastream's MTS2 player.—*CL*

One way to use this new 3D technology is for developing games, such as this driving game for the Web.

It's like paper dolls, but in 3D...and on the Web. Using the Intel-Macromedia technology, a company called Virtual Model is experimenting with letting shoppers try different outfits on their body type.

You can check the front, sides, back, and insides of furniture using 3D technology—and you'll avoid all those long lines.

TECH info TIDBIT

Random notes from the TIL

We culled these tasty treats from Apple's Tech Info Library. Visit the TIL at http://til.info.apple.com to gather lots of technical goodies—or just to let the folks there know how delicious their information is.—*DR*

- In Mac OS 9, an individual application can only have 999MB of RAM assigned to it.
- Connecting two Power Macs with gigabit Ethernet doesn't require a crossover cable. A standard four-pair category 5 Ethernet cable will work just fine.
- Connecting a Power Mac with gigabit Ethernet to a Mac that doesn't have gigabit Ethernet requires a crossover cable.
- The Power Mac G4 Cube's power supply has a storage temperature range of 14 to 158 degrees Fahrenheit, but you should only operate it when the temperature is 32 to 104 degrees.
- The four small screws in the Power Mac G4's accessory kit are there so you can mount a second hard drive to the internal mounting bracket.
- Slot-loading iMacs (and the G4 Cube) shouldn't use nonstandard CDs (such as the small AOL CDs) or noncircular CDs.
- You shouldn't operate the Power Mac G4 Cube above 3,000 meters of altitude (nearly 10,000 feet) or below sea level.

Browsing with the F-Keys

Yet another cool function-key trick

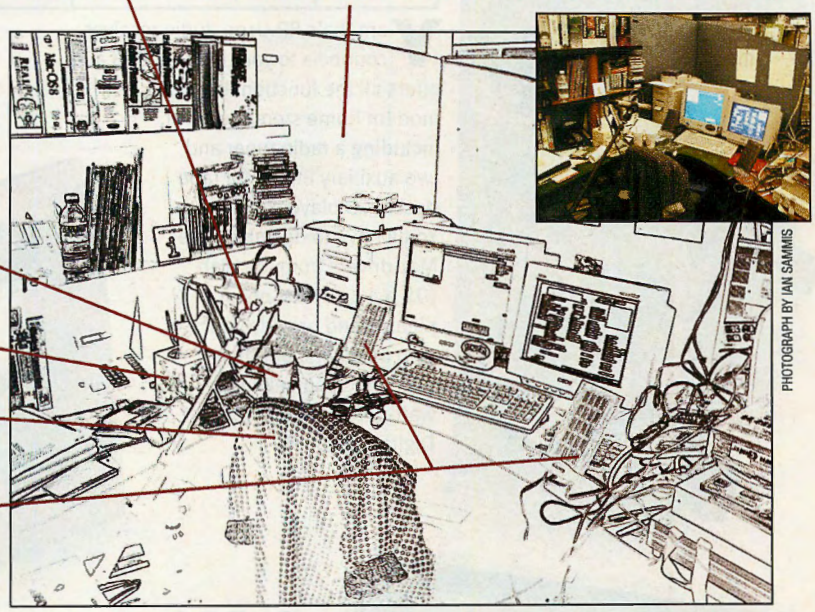
Starting with Mac OS 9, owners of USB-based Macs can assign actions to the forlorn set of function keys patiently sitting at the top of their keyboards. Back in April, we gave you some tips for using these ("How to Utilize Your Function Keys with Mac OS 9," Apr/00, p70), but we left out a way to speed up your Web surfing.

Launch your browser and go to a favorite Web site. Highlight the URL and drag it to the desktop to create a shortcut to the Web site. Put the file in a folder—wherever you want to store it—then open up the Keyboard control panel. If you have a USB-based Mac with OS 9, you should see a Function Keys button. Clicking this button opens a window listing the assignments for each F-key. Click one of the buttons that represents a function key, choose the file you created from the Web site, then click Assign. Click OK, then close the control panel. All you have to do now is press the programmed F-key, and your default browser launches and brings up your site. Now that's quick surfing!—*Jonathan Claydon*

The *MacAddict* Acoustical Testing Facility

Better testing through science!

Here at *MacAddict* Labs, we're dedicated to bringing you the most accurate metrics possible in our product testing. Unlike so many other labs, we don't test speakers in highly misleading, acoustically perfect environments. Instead, we've created the *MacAddict* Acoustical Testing Facility (MATF), which we consider to be the finest simulation of real-world office conditions in existence. To give you some sense of the work that went into the creation of the MATF, here's a quick tour.—*IS, AT*



The microphone, placed roughly where a head would go.

Cubical walls, which both dampen and reflect sound, can create resonant frequencies that sharply distort the acoustic response. This is typical of office environments (home environments tend to have even sharper distortion due to stronger sound reflection from plaster walls).

Coffee cups produce high-frequency distortion when placed near speakers, as shown here.

Tissue boxes do strange things to sound. We're not sure exactly what the effects are, but they make things sound weird.

This jacket hung across the back of a chair mimics the effects of a typical jacket hung across the back of a typical chair.

The speakers themselves were placed in positions that leave them 24 degrees away from the ideal 60-degree angle between the speakers and the listening position. We also carefully moved the right speaker 15 inches closer to the microphone than the left speaker in order to simulate a listener some distance from the center of the audio field.

PHOTOGRAPH BY IAN SAMMIS

The MATF, during a recent speaker test.

HACKitIN Making peripherals work by any means necessary

PC Game Port controllers

This month we're making a slight departure from our normal mode of operations. Normally, we pick a specific PC-only piece of hardware and get it working with the Mac. This month, we're dealing with an entire category of hardware—the PC Game Port joysticks, wheels, and controllers that dominated the gaming world until the advent of USB.

How can we address an entire category at once? Our unlikely hero this month is Radio Shack (www.radioshack.com), the purveyor of some profoundly ugly multicolored computers from one of those other computer companies. Nearly hidden among its computer peripherals you'll find a lovely little $15 gadget called the Game Port USB Adapter. This wonderful little gizmo turns most Game Port controllers into well-behaved USB devices that InputSprockets can cheerfully identify and use. Some controllers we tested didn't work with the adapter, so you might want to borrow the one you want from a friend before you buy it—but most simple wheels, joysticks, and controllers worked well for us. Now you can play Driver and Carmageddon the way they were meant to be played.—*IS*

Hurrah for Radio Shack?

PHOTOGRAPH BY AARON LAUER

MP3 Under the Hood

What do all these encoding options mean?

With the proliferation of MP3 files, software, and hardware over the years, have you ever wondered what all these encoder names mean? Here's a list.

FRAUNHOFER-THOMSON (www.iis.fhg.de/amm) is the patent holder of the MPEG Layer 3 compression standard. The code is freely available, but Fraunhofer-Thomson Group licenses its use in products. Casady & Greene's SoundJam MP and Proteron's N2MP3 license the Fraunhofer codec, but contain proprietary code to improve performance and quality.

BLADE (or BladeEnc, http://bladeenc.mp3.no) is another encoder based on the Fraunhofer codec. Formerly it was available free, but the developers ran into licensing problems. You can now obtain it only as a plug-in—using it in a front-end application would require payment of royalties.

LAME (www.sulaco.org/mp3) started life as an open-source patch to the Fraunhofer code that made the latter encode more quickly while retaining quality. In May this year, LAME became a fully independent encoder. LAME stands for "Lame Ain't an MP3 Encoder."

OGGVORBIS (www.xiph.org/ogg/vorbis) is an ambitious project that's working on an open-source, license-free MP3 alternative. This would let developers write audio compression software that would use a format similar in size and quality to MP3 without having to worry about patents.—*AT*

drool worthy

PHOTOGRAPH BY JOYCE OUDKERK POOL

@PET RP-U100 Receiver

Yamaha	www.yamaha.com	$499

Yamaha's RP-U100 audio receiver connects to your Mac via USB and offers all the functionality of a modern home stereo receiver, including a radio tuner and two auxiliary inputs for tape decks, CD players, and such. You'll have to download the Mac drivers from the Web (OS 9.0.4 or later only, please) and provide your own speakers, but then you'll find yourself in 30-watt-per-channel, Dolby Digital bliss.—*RC*

Smart Picture Frame

Kodak	www.kodak.com/go/smartframe	$349

Kodak has turned digital photography upside down with its Smart Picture Frame, a device consisting of an LCD screen, a CompactFlash slot, and a modem set in a handsome wooden picture frame. The Smart Picture Frame displays photos from its CompactFlash card, or ones it downloads via its modem. Besides displaying photos, you can order prints and ask the Smart Picture Frame to show news headlines, local traffic reports, and weather.—*DR*

PHOTOGRAPH COURTESY OF KODAK

PHOTOGRAPH COURTESY OF WACOM

PL500

Wacom	www.wacom.com	$3,999

Reigning graphic tablet champion Wacom recently updated its LCD monitor-based tablet system with the new PL500. This 15-inch device combines a pressure-sensitive graphics tablet with an active-matrix color TFT screen. It's brighter than its 13-inch predecessor and now supports up to 16 million colors, allowing artists of all kinds to draw directly into their computer with more precision than ever before. At four grand, the PL500 will also leave them poorer than ever before.—*RC*

How QTC became QTTV

Whatever happened to QuickTime Conferencing?

Of all the technologies that vanished in the years between 1995 and 1998, perhaps the most mysterious disappearance was that of QuickTime Conferencing. Although many of the other projects reeked of doom from the start, QTC appeared to have everything going for it. It was part of QuickTime (nearly the only new architecture that survived the mid-90s intact), it was sexy, and it fundamentally worked. So, why did QTC vanish? It didn't—instead, it became the foundation for QuickTime Streaming.

According to Dean Blackketter, an engineer that worked on the QTC project before leaving Apple in 1996, QuickTime conferencing was based upon two fundamentally wrong bets: It presupposed that the primary users would want to use it on high-bandwidth networks, and it was based on AppleTalk instead of TCP/IP. These errors of judgement relegated QTC to Appletalk LANs—resulting in a tiny user base. As current QuickTime Marketing Manager Rhonda Stratton put it, "You could have these great little five-frames-per-second conferences inside Apple, but no-one else had a comparable setup."

By the end of 1996, Apple had to make a choice regarding what their QTC team should do with the technology. According to Mitch Weinstock, Apple's QuickTime product manager at the time, Apple decided to take the QuickTime Conferencing team and focus on Internet streaming instead of videoconferencing. The result, of course, was QuickTime's current ability to stream content over the Internet. In return for relatively poor videoconferencing support, Apple has a technology that's currently supporting roughly 45 QuickTime TV channels, hundreds of live events per year, and free servers on several operating systems.—*IS*

Illustration never looked so good.

Eye-catching illustration, isn't it? And yes, despite the glistening highlights, the realistic textures, the subtle shading, and the soft airbrushed effects, this is a completely vector illustration. And it's only possible with Canvas 7.

Match pinpoint precision with painterly strokes through Canvas 7's exclusive Sprite technology. Blur vector lines, paint transparency effects, apply image filter plug-ins to vectors, text and images. It's hard to believe that you can draw like this – nevermind in one, attractively priced program. When you're done, prepare your creative visions for print or web with an incredible array of over 40 file format filters.*

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* 40 file formats available in Canvas 7 Professional Edition only.

Shareware Pick of the Month

Interarchy

PRICE: $50 URL: www.interarchy.com

Find Interarchy 3.8 on The Disc

Using a sorcery metaphor and lots of programming labor, Stairways Software has renamed and remade its flagship software. The binary formerly known as Anarchie is now Interarchy, and its transformation goes much deeper than a mere name change. Interarchy includes Anarchie's impressive FTP and HTTP download capabilities, but adds a full suite of utilities to the mix. You can use the program to trace packets across the Internet, look up who owns various URLs, and watch your network stream in a separate window that logs every transaction taking place. Interarchy also adds what amounts to a complete Internet control panel, with buttons for launching your Web browser, email client, or news reader. If you're feeling particularly creative, you can utilize a new feature called Wands, which lets you build custom skins for Interarchy in any shape, including buttons. If you want an Interarchy interface in the shape of an iMac, with one big button in the center that opens your Web browser, you can make it happen.

Despite its ability to provide a ton of Internet utilities, Interarchy takes up just a few megabytes of RAM. As shareware prices go, $50 is a little steep, but if you use the Internet much—and that includes just about everyone these days—you'll get your money's worth. Interarchy is the best Internet utility to come along in a very long time.—*DR*

That's no sorceress—it's a user interface! The new Wands feature lets you create skins for your main Interarchy interface.

Click this button to call up a window that contains your current network status, including your IP address.

This button opens up the Network Traffic window, in which you can watch your TCP traffic fly by.

If you want to know who owns a particular URL, click this button. A window opens in which you can type the URL to run a Whois query.

Although not many folks use Finger—a program that lets you look up the owner of a particular email address—there's a button for it in the main Interarchy interface.

Click this button to call up a search window directly linked to all of your installed Sherlock plug-ins—without launching Sherlock.

Master of Someone Else's Domain

Think you know who owns these URL's? Think again.

There's been a lot of talk over the years about domain names—who owns them and what happens when two or more parties lay claim to the same URL. Although we don't have any answers to those thorny questions (think we'd be working *here* if we did?), we *do* have access to the Internet and the Whois database (a nifty database that lists the owners of URLs), so we took the opportunity to look up who actually owns some seemingly familiar domain names. Here are ten interesting results.—*DR*

URL	WHO YOU THINK OF	WHO ACTUALLY OWNS IT	WHAT'S ACTUALLY THERE
www.golive.com	Adobe	Mimosafun Entertainment	A portal site with links to music, movies, and game sites
www.macintosh.com	Apple	Lawrence Computer Systems	Nothing
www.g3.com	Apple	G3 Systems	A multimedia and Internet service provider
www.g4.com	Apple	Get on the Web Limited	A placeholder Web page
www.quicktime5.com	Apple	Namezero.com	A mock Apple page with some links to Internet movie sites
www.ibook.com	Apple	Alderside Limited	A site for interactive user-modifiable electronic books
www.powermac.com	Apple	Orbit Web Development	An empty server directory
www.freehand.com	Macromedia	FreeHand Fine Crafts	A slough of fine crafts such as jewelry, ceramics, and the like
www.macsoft.com	MacSoft (the game company)	MacSoft Software (Lightspeed Systems)	A network software company's Web site
www.excel.com	Microsoft	Excel Communications	A telecommunications Web site

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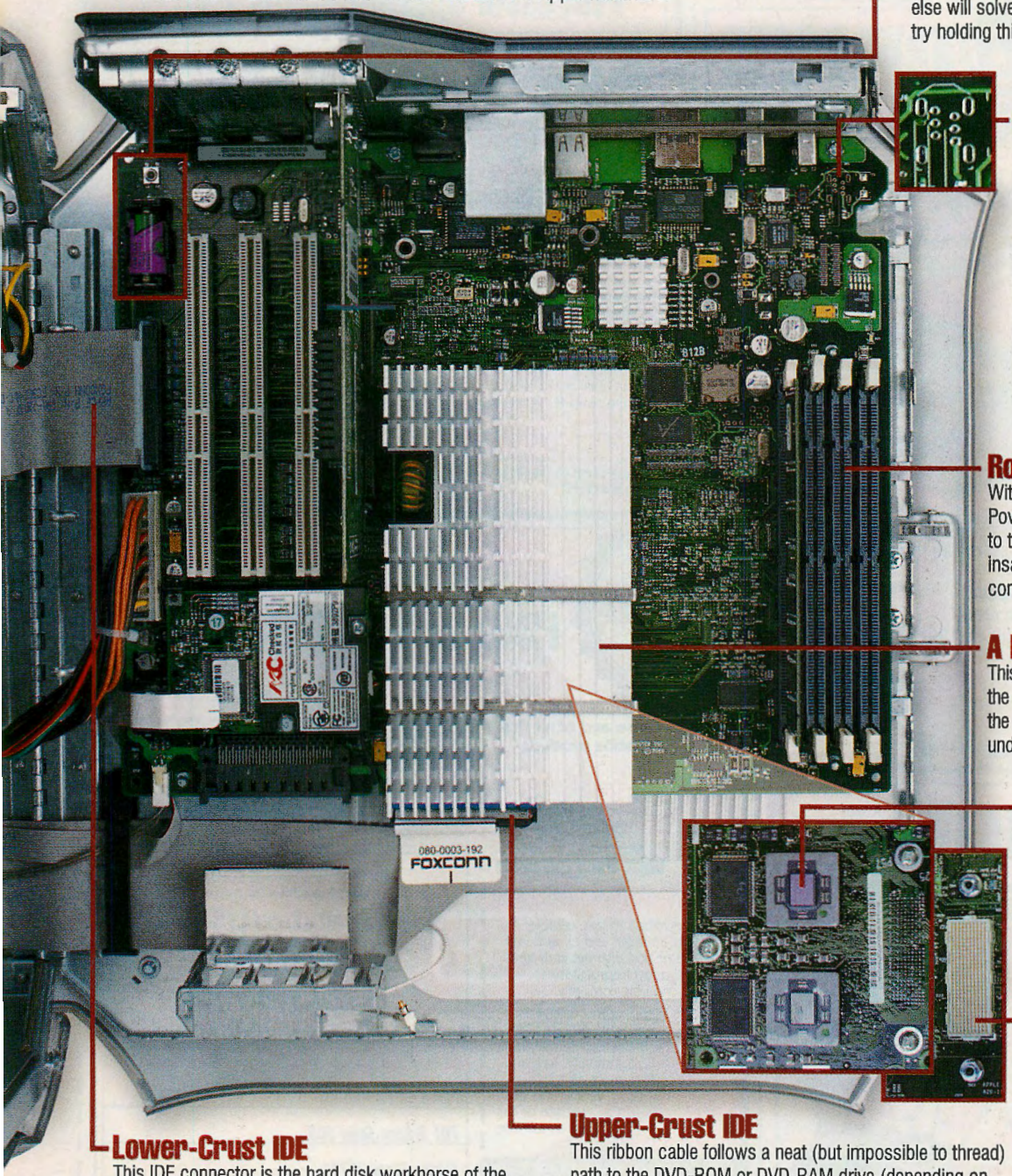
The multiprocessor G4 dissected for your pleasure—ya sick puppy, ya.

Multiple Processors in One Mac

by David Reynolds

To continue our fine tradition of close-up motherboard photography, we took a look at the new multiprocessor G4's motherboard to find out what's new—and what's not—in the hottest new Apple hardware.



PRAM and CUDA

It's not the name of a bad Sylvester Stallone movie—rather, these terms refer to the battery that keeps your Mac's PRAM alive and the reset switch that clears it. Think of the CUDA reset switch as the start-over button—*when nothing* else will solve a really strange hardware problem, try holding this down for ten seconds or so.

AWOL FireWire

The previous generation of G4s had an internal FireWire connector attached to the motherboard here. This has disappeared from the latest version, but the connector holes are still there, if you have a soldering iron and don't mind voiding your warranty (wink, wink). Let us know if it works or if you just end up burning out your motherboard. No lawsuits, please.

Room for RAM

With four PC-100 RAM slots, the Power Macintosh G4 is ready to rock to the tune of 1.5GB of RAM. Only the insanely rich or demented need consider this option.

A Big Chunk of Metal

This big heat sink—nothing compared to the ones that cool Pentium IIIs—draws the heat off the twin G4 processors underneath. Two clips hold it on.

PHOTOGRAPH BY AARON LAUER

It's Twins!

Side by side on the same processor card, the twin G4 processors provide twice the marketing power. When Mac OS X ships, they'll provide twice the processor power, too.

No More ZIF

The familiar ZIF socket, which connected older G3 and G4 processors to the motherboard, has gone away in favor of this new multipin connector. It's the same one the G4 Cube uses, by the way.

Lower-Crust IDE

This IDE connector is the hard disk workhorse of the Power Mac G4. It connects the main hard drive to the motherboard, and if you add a second hard drive to the lower bracket, you'll connect that drive to this port, too.

Upper-Crust IDE

This ribbon cable follows a neat (but impossible to thread) path to the DVD-ROM or DVD-RAM drive (depending on the model) in the upper bay. It can also connect a second hard drive or an externally facing peripheral such as a Zip drive, housed in the second upper bay.

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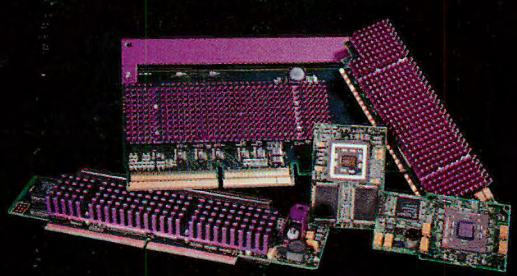


More than 150 shareware and freeware plug-ins to pump up your apps beyond belief!

Supercharge Your Software

by David Reynolds

PHOTOGRAPH BY JOYCE OUDKERK POOL

If we could make one generality in this world, it's that there are two kinds of people. There are those who go to a car dealership and buy a stock beauty, letting the dealer outfit their new purchase with all the niceties and extras. And there are those who buy the base model, take it home, and then trick it out themselves with custom parts to make it powerful, efficient, and unique.

You can apply this metaphor to Mac software—and the Mac OS. Because many Mac apps have a plug-in architecture (meaning the application can take on extra abilities without being rewritten), you can often customize your programs by adding specialized bits of software called plug-ins (also known as actions, extensions, filters, XTensions, or Xtras, depending on the program). Sure, plenty of people don't mind driving stock applications, taking them to the store on Sundays, and keeping them in the garage. But before you put yourself in that category, consider this: Wouldn't you rather drive a set of tricked-out Mac apps that make passersby marvel at their power, speed, and sheer beauty? Especially since it won't cost an arm and a leg? We thought so.

Here we'll show you how to take your Mac applications to the next level. We'll talk about everything from installing and using a plethora of plug-in modules with your most well-trodden Mac apps to supercharging the Mac OS itself. And best of all, each of the plug-ins we talk about costs less than $100—most of them fall below the $50 mark, and some even come free. That means without spending a huge pile of money, you'll soon be getting things done with more speed, power, style, and grace than you ever believed possible.

Many of these plug-ins are available on The Disc; look for the On The Disc icon.

Have a favorite plug-in for supercharging your apps? Discuss it at www.macaddict.com/debate.

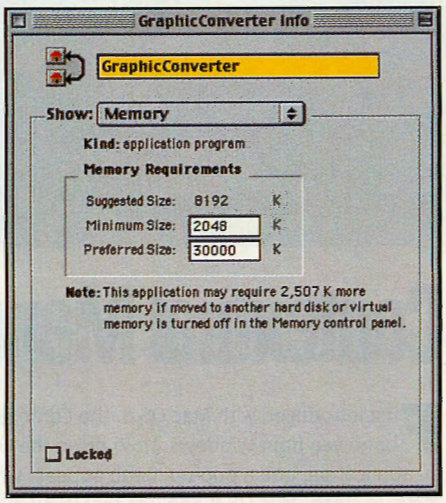
How Plug-ins Work

Think of plug-ins as mini-applications that perform specific tasks for a primary application. You can add and remove these mini-apps at any time without modifying the main program at all. A program with plug-in support is a little like a house with a bunch of electrical outlets (hence the term plug-in). The house functions just fine as a basic shelter without anything plugged into the outlets, but if you want some light and you want to make fresh toast, you'll need to plug in a lamp and a toaster.

Installing software plug-ins is pretty easy. It usually involves putting the files you download in a special plug-ins folder, often located inside the main application's folder. When you launch the main app, it scans the special plug-ins folder and incorporates the abilities of any plug-ins it finds—sort of a Borg assimilation thing, but far kinder and gentler. After it finishes launching, the program sports all kinds of new features. In the case of Mac OS plug-ins (such as Contextual Menu Manager items and Control Strip items), you'll have to restart your Mac to load the OS with the new plug-ins.

Some plug-in types have become standards you can use with several different programs—Photoshop plug-ins, for example. While some Photoshop plug-ins won't work with other graphics programs, others will work with apps like Deneba Canvas, Corel Painter (formerly MetaCreations Painter), and several of Adobe's other programs (such as LiveMotion). It's often a trial-and-error affair, unfortunately. Check the plug-in's documentation to see its compatibility with other applications; if all else fails, you can just install it (or a demo version) and give it a whirl yourself.

Finally, you should remember a couple of things. Many plug-ins are platform-specific—that is, they only work on a Mac or on a PC. So make sure you download the Mac version, otherwise your plug-in might unpleasantly surprise you by refusing to show up. Also, plug-ins utilize memory from the host program. Therefore, it's usually a good idea to boost the host application's memory partition size when installing a new plug-in. To do this, select the host app in the Finder, then choose Get Info from the File menu, or type Command-I. (Mac OS 9 users must select Memory from the Get Info submenu under the File menu.) Increase the amount of memory in the Preferred Size box by a few thousand kilobytes (the documentation for the individual plug-in may offer particular suggestions for this setting) and close the Get Info window. Remember that you can't change memory allocation while a program is running, and, of course, you can't increase the memory of the Mac OS.



Since plug-ins use RAM just like any other program, you may need to increase the host program's Preferred Size setting under Memory Requirements in the Get Info window.

Control Strip Modules

Originally designed as an aid to PowerBook users, the Control Strip has since graduated into a full-fledged utility suitable for Mac users of any kind. Modules (the little individual squares within the Control Strip) typically provide quick access to controls usually found in the control panel, such as sound volume, color depth, and AppleTalk status. Over the years, third-party developers have created additional modules that expand upon the Control Strip, putting a ton of your Mac's controls in one efficient, space-saving place. Get used to bad Strip puns in these file names (such as CalcStrip). They're everywhere.

How to Install

Installing Control Strip modules is a simple matter. In most cases, you can just drop the module on your closed System Folder, and your Mac will inform you that it's routing the module to the Control Strip Modules folder. After the module is safely ensconced in its cozy new home, simply restart your Mac. The module will show up in the Control Strip after startup.

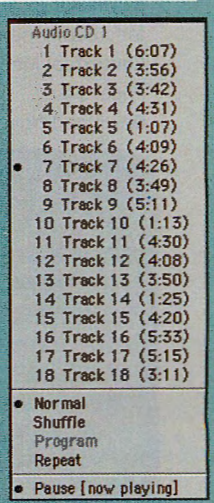
CalcStrip

Getting to the Mac OS calculator is kind of a pain, so why not put a calculator on your Control Strip? With CalcStrip by Tao Siga, you can access a fully functional basic calculator with a mouse click, and you don't have to leave the current program to do calculations.
Price: $5
Download from:
www.vector.co.jp/authors/VA014067/en.html

The answer is the number of times we've told each reader, on average, to zap his or her PRAM. The question: What's the number displayed on the ultranifty CalcStrip?

Minuet

Now *here's* something all Control Strip aficionados should have. This module by John Brochu puts a full-function CD player in your Control Strip, complete with a mini track-number indicator, volume slider, and play-time display.
Price: $15
Download from:
http://sitelink.net/jbrochu



There's no need for a separate CD player app when you have the Minuet Control Strip module.

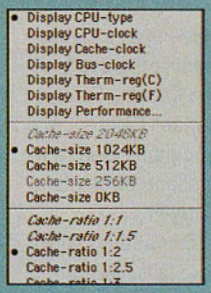
Control Strip Modules (cont.)

G4Strip

This module (also by Tao Siga) is the ultimate set of controls for those with G3- or G4-based Power Macs. G4Strip lets you access vital information about your processor (such as its temperature and cache speed), which you can use to tweak your G4's cache setting. While such cache-tweaking may give you a performance boost or save some power, it may also produce a crash—so approach this feature with care.

Price: $10

Download from:
www.vector.co.jp/authors/VA014067/en.html



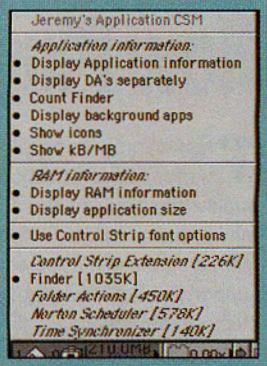
You can tweak your G4 from the Control Strip with G4Strip. The squeamish should leave this one alone; power users can dive right in.

Jeremy's CSM Bundle

This collection of Control Strip modules has something for everyone. In some cases it duplicates what Apple's CSM already does. However, Jeremy tops Apple by offering a better battery module and 16 functions, including AppleTalk, CPU speed, and Energy Saver settings.

Price: $15

Download from:
www.kezer.net/csm.html



Jeremy's been a busy person, writing killer Control Strip utilities such as Jeremy's CSM Bundle, which gives you more information about *all* running applications.

Contextual Menu Manager Items

First introduced with Mac OS 8, the Contextual Menu Manager is one of the few good ideas borrowed from Windows. Hold down the Control key and click anything, be it your desktop or an application, and a pop-up menu appears with a list of possible actions, such as New Folder or Move To Trash. Mac OS 8 one-ups that Windows feature with the Contextual Menu Manager and its Contextual Menu Items folder. The Contextual Menu Manager brings contextual menus to the Mac, and it adds any plug-ins it finds in the Contextual Menu Items folder (which lives in the System Folder) to its abilities. By adding items to this folder, you can add new powers to the contextual menu. Very cool!

How to Install

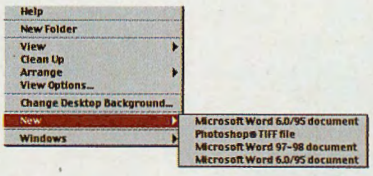
Most of the time, installing a new Contextual Menu Manager item is as easy as dropping the item on the System Folder, which will then route it to the Contextual Menu Items folder. You'll need to restart your Mac to load your new contextual menus, but once it restarts, they're ready to go with a mere Control-click. You'll marvel at the power!

NewCM

David Catmull's Contextual Menu utility borrows an idea from Windows—Control-clicking to create a new document—and improves on it by letting you specify what kind of document (such as Photoshop or Word) you want to create and what app should launch the new document. NewCM requires a little setup: You have to provide a sample document so it has a template for creating new documents. Just file one in NewCM Items inside the Contextual Menu Items folder in the System Folder. It's a real time-saver.

Price: $9

Download from: www.uncommonplace.com



To add a New Document command to the Mac OS contextual menu, all you have to do is install the NewCM utility.

StuffCM

Another plug-in from David Catmull, StuffCM works with Aladdin Systems' StuffIt compression program to let you stuff files, segment large files into smaller ones, and encode them as MacBinary or BinHex. StuffCM has a companion control panel that lets you control how the StuffCM contextual menu behaves, such as what menu commands are available and whether those commands appear in a submenu. It's perfect for rapid StuffIt work!

Price: $9

Download from: www.uncommonplace.com

MovieUtilities

These four utilities by Alberto Ricci pack tons of power behind a Control-click. With MovieUtilities, you can play a movie in a Finder window without launching an application, convert images to movies, convert movies to one of several different audio and video formats, and merge or join several movies into one—all of this without opening a single application.

Price: $15

Download from:
www.riccisoft.com/cmm

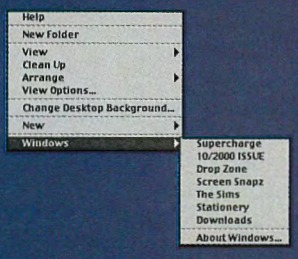
So many choices—if you're looking to convert a media file to a different format, you can't go wrong with the MovieUtilities plug-in.

WindowPicker

Now here's a little nicety that the Mac OS has been missing for a long time—a list of all open Finder windows. With WindowPicker, you can switch between these windows by just Control-clicking somewhere in the Finder and selecting the window you want from the list. Simple, yet incredibly useful.

Price: Free

Download from: www.hi-resolution.com



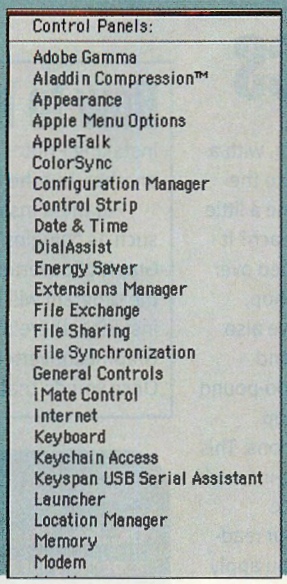
A display of every open Finder window—now *that's* useful!

Control Panels Strip

This module puts a list of control panels just a click away in your Control Strip. By pressing a variety of modifier keys, you can display extensions and Control Strip modules, disable items, perform a search on an item using the Get Info command, move some things to the Trash, and even use Balloon Help.

Price: Free

Download from: www.skidperfect.com



Man, that's a lot of potentially crash-inducing control panels loaded. Fortunately, we can disable any of them with a single click in the Control Panels Strip module.

TIP To rearrange the order of Control Strip modules, hold down the Option key and drag the module to the desired location. Dragging a module off the strip while holding down the Option key will move the module out of the Control Strip Modules folder altogether and into the location where you drop it. To slide the strip up and down the side of your desktop, hold down the Option key while dragging the strip's end. For more Control Strip tips, check out our "Control Your Control Strip" article (*How To*, Feb/00, p70).

Sherlock

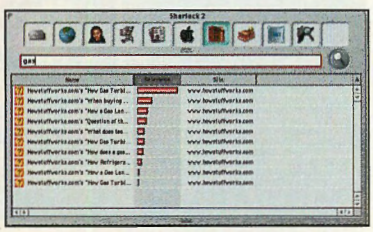
Funky interface aside, Sherlock, which premiered in Mac OS 8.5, is one of the crown jewels of the Mac OS. Sherlock searches multiple Web sites and returns the results. By adding Sherlock plug-ins (also known as Internet Search Sites), you can search a staggering number of specific Web sites. Sherlock plug-ins typically have the .src extension tacked onto the file name.

How Stuff Works

This Sherlock plug-in searches through the How Stuff Works Works Web site for tidbits on mechanical and technical devices—mainly how they work.

Price: Free

Download from: www.sherlockplugins.com



Nothing a little Bean-O wouldn't help, but the How Stuff Works Web site doesn't touch on *that*.

NetVet

If you share your home with a furry, feathered, or finned friend, you'll want the NetVet Sherlock plug-in to grace your System Folder. With it, you can search for all manner of information related to animal health.

Price: Free

Download from: www.sherlockplugins.com

How to Install

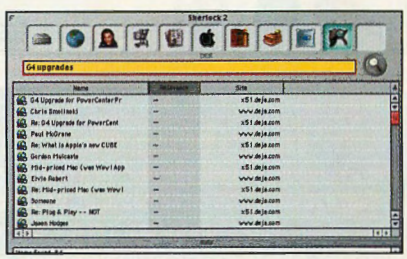
To install a Sherlock plug-in, just drop it on the System Folder. The Mac OS will put the plug-in into the Internet Search Sites subfolder inside the System Folder. The next time you launch Sherlock, your new plug-in's available—no restart required. Mac OS 9 users face one additional catch: With the addition of Sherlock II, the system divides the plug-ins into channels, which are nothing more than individual folders in the Internet Search Sites folder. When you drop a plug-in into the System Folder, the system puts it into the Internet Search Sites folder, but not into one of these subfolders—that is, until you launch Sherlock II. Then the new plug-in automatically moves into the My Channel folder. (My Channel is the icon with the Sherlock Holmes hat and magnifying glass.) If you want the plug-in to appear in a channel other than My Channel, you'll have to move it elsewhere yourself.

Deja.com

For access to the best set of rambling diatribes, complete with unique misspellings, you can't beat Deja.com's archive of Usenet posts. With the Deja.com Sherlock plug-in, you'll have access to all of those wonderful tidbits from within the Mac OS itself.

Price: Free

Download from: www.sherlockplugins.com



If you're looking for scads of other people's opinions, there's no better place to look than Deja.com's Usenet archive.

TIP For additional Sherlock plug-ins, check out Apple Donuts (www.apple-donuts.com), the Sherlock Plug-ins for Power Searchers page (http://members.aol.com/pwrsearchr/sherlock/pages/spfps.pg1.html), and Sherlock Plugins (www.sherlockplugins.com).

TIP In Mac OS 9, don't try to make a new channel by adding a folder to the Internet Search Sites folder—use the New Channel command from the Channels menu. Sherlock II makes several special files when it creates a channel. If you merely try to add a folder, you won't end up with these files.

Photoshop & Graphics

The grand-daddy of all plug-ins has to be the graphics plug-in, with a long and distinguished heritage stretching all the way back to the Civil War, when...OK, so graphics plug-ins really came on the scene a little more than ten years ago. Remember SuperPaint 2.0 by Silicon Beach? It was one of the first Mac apps to use plug-ins. That trend has carried over to just about every graphics program available, including Photoshop, FreeHand, Canvas, Illustrator, and GraphicConverter. Plug-ins have also made their way into layout applications, including QuarkXPress and Adobe InDesign. Since they're associated with Photoshop, the 500-pound gorilla of the graphics world, plug-ins that work with the Photoshop standard are compatible with a variety of other graphics applications. This compatibility is by no means complete, though: While some plug-ins work fine in several different graphics applications, others may produce unpredictable results, or crash your Mac altogether—so check your read-me files. So what do Photoshop plug-ins do? Generally they let you apply effects to an open graphic, or import and export new file formats.

BladePro

If you need to add texture, Flaming Pear's BladePro will most certainly do the trick for just about any image. With its ability to combine textures and bevels, and to add metallic, bump-map, and tarnish effects to graphics, BladePro is the answer to the eternal question of how to make a candy-like 3D widget in Photoshop.

Price: $49

Download from: www.flamingpear.com/downloads.html

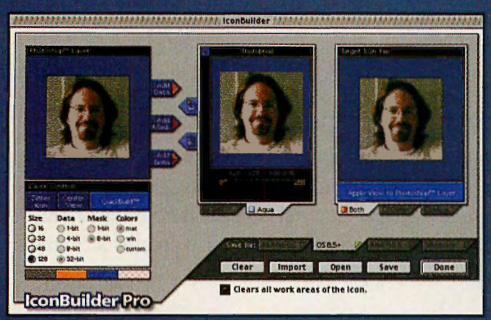
Dingbats suddenly become powerful symbols, suitable for any graphic scene, after going through the BladePro plug-in.

IconBuilder Pro

This plug-in is the ultimate tool for icon designers (or those who need to slap a custom icon on something). With IconBuilder Pro, you can effortlessly create icons for Mac OS 8.x, Mac OS 9.x, Mac OS X, and even Windows. A lite version is available for $29, but it doesn't include all of the Mac OS X and Windows icon creation features.

Price: $69 for full version; $29 for lite version

Download from: www.iconfactory.com



Even a $69 plug-in can't make this ugly mug look any prettier, but it can make an icon out of it.

How to Install

Installing Photoshop plug-ins varies from one graphics program to another, but the basic concept is the same:

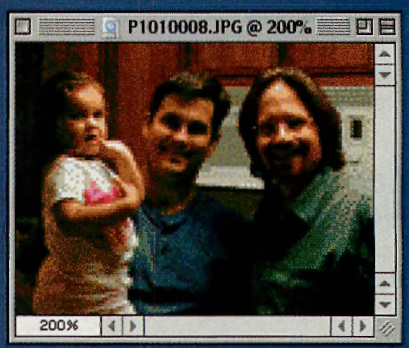
Put them inside a special folder (usually with an inspired name such as "plugins"). With some applications, such as Canvas and GraphicConverter, you'll need to specify a plug-ins folder from which the program will load the Photoshop-compatible digital goodies. For instance, there's already an empty plug-ins folder in GraphicConverter's folder, but you have to tell the program where it is. Once you do that, launching GraphicConverter will load the plug-ins.

Cross Stitch

OK, don't laugh. This plug-in is much cooler than it sounds, especially for those who have a hankerin' for needle, thread, and lots of color. Cross Stitch creates a printable cross-stitch pattern from just about any GIF image you want. Try to keep the image size small—remember that cross-stitch is not a high-resolution medium.

Price: Free

Download from: ftp://ftp.amug.org/amug-files/publish/photoshop/cross-stitch.sit.hqx



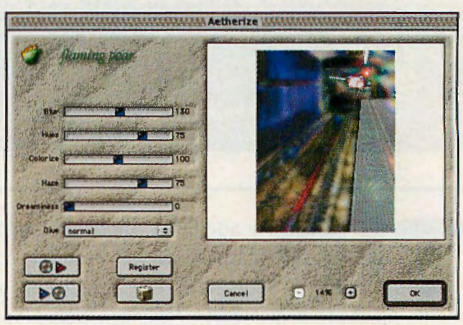
Starting with a small indexed color image, we can create a cross-stitch pattern.

Designer Sextet

This set of six plug-ins from Flaming Pear lets you add wild effects to your graphics. The plug-ins—Aetherize, Twist, Swerve, Lacquer, Silver, and Glare—do pretty much what their names imply. There are some great artsy effects here, and the filters have tons of customization controls—all for the price of a computer game.

Price: $49

Download from: www.flamingpear.com/download.html



The L.A. subway system never looked so dreamy as it does after a little time with the Aetherize plug-in, one of six in the Designer Sextet collection.

Plugin Galaxy

This collection features 20—yes, 20—plug-ins that work with Photoshop, Illustrator, Canvas, FreeHand, FireWorks, and Painter, to name a few apps. Some of the effects include the Alpha Tool (for transparency), Breakfast (a texture tool), and Chrome (for metallic and neon effects).

That must be some goooood ice cream. The effect is compliments of the Star filter in the Plugin Galaxy pack.

Price: $49.95
Download from:
http://thepluginsite.com/products/plugingalaxy/plugingalaxy.htm

RetroScan

If you're more than 25 years old or you live in the boonies, you're probably familiar with the effects of questionable television reception. Now, with the RetroScan Photoshop plug-in, you can bring that look to your digital artwork. RetroScan lets you simulate signal strength, scan line size, and a host of other parameters.

This Vespa looks as if it belongs in an old television show—RetroScan can give it the style to go with its hip aura.

Price: $20
Download from:
http://members.aol.com/deepdevice

Callisto

Now here's a true bargain for you Photoshop mavens—especially those among you who like to render 3D terrains. Callisto lets you create 2D terrains and 3D spheroids from 2D graphics by converting the graphic to a height map. Plus, you can use the plug-in to apply texture maps to the objects you create. This one's highly recommended!

You wouldn't think an image pulled from The Sims would make a great 3D planet, but it does!

Price: $20
Download from: http://members.aol.com/Callisto3D

Random Eye Image Grabber

Designers who constantly have trouble finding just the right stock image will love the Random Eye Image Grabber plug-in. It lets you search for stock images from several stock photo houses—all from within Photoshop. You can search by keyword and check whether the image is royalty free.

Nice doggie—come to Photoshop, and I'll give you a Milk-Bone.

Price: $49.99
Download from:
www.randomeye.com

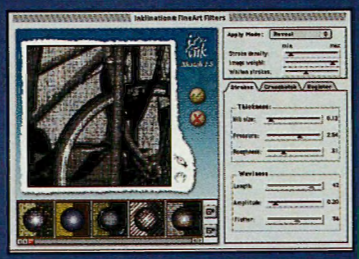
Flaming Pear Freebies

This package, which definitely has the right price tag, is made up of simple effects such as ChromaSolarize, Ghost, Make Opaque, Tachyon, and Vitriol, and it has three plug-ins for swapping color channels—green and blue, red and blue, and red and green.

The backyard never looked so bright—and it never will, either, unless you use ChromaSolarize, a Flaming Pear freebie.

Price: Free
Download from:
www.flamingpear.com/download.html

Xhatch



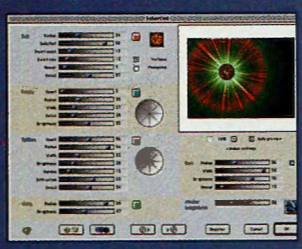
Do you miss the good old days of art school, when you used a fountain pen and a bottle of ink for cross-hatching? The Xhatch Photoshop filter has a ton of options for choosing stroke direction, pen width—the whole nine yards. While its author, Georges Winkenbach, no longer sells the registration code, he has graciously provided *MacAddict* readers one for free—it's in the Xhatch Read Me file.

That bicycle wheel looks like it came out of an art class, but it didn't.

Price: Free to *MacAddict* readers
Download from: www.inklination.com

Four Filter Special

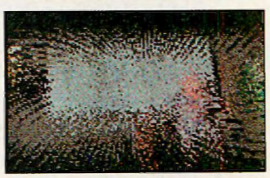
This classic set of plug-ins from Flaming Pear includes Tesselation, FeatherGIF, India Ink, and SolarCell—four killer effects that add tiling, inking, and color effects to your graphics. You can register them separately, but why not save a little scratch and get them all?



There goes our satellite communications system again.

Price: $39
Download from:
www.flamingpear.com

Harry's Filters



How would you like 50—yes, five-zero—Photoshop plug-ins for free? We thought so. Harry's Filters, which also work with AfterEffects, cover the gamut, adding noise, colorization, limiters, digital zoom, and all kinds of other effects. The package also includes a series of gradient, image encryption, and image generation plug-ins.

Adding ripples to your images is no sweat, thanks to the SwirlDistortion plug-in, one of Harry's Filters.

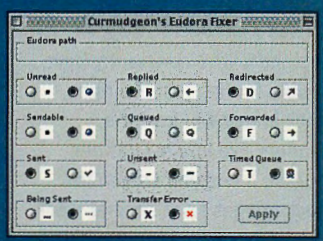
Price: Free
Download from: http://pico.i-us.com/filters/harrysfilters.htm

Email Programs

You might not have thought email programs could deal with plug-ins, but they can—and very well, too. Most of the time, though, these plug-ins are actually AppleScripts stuck in a special folder, but conceptually these scripts work the same way as plug-ins. Both Eudora and Outlook Express—the two most popular stand-alone email clients on the Mac—can handle these types of plug-ins.

Curmudgeon's Eudora Fixer and Eudora Sound Mover

Instead of whining about the way Eudora 4.x handles messages to which you've responded and deals with custom sounds, St. John Morrison took matters into his own hands and wrote these two utilities: Curmudgeon's Eudora Fixer and Eudora Sound Mover. Curmudgeon's Eudora Fixer is an application that patches your version of Eudora to change the way the program's Status Field works. Eudora Fixer returns to the letter-based notification familiar to version 3.x and earlier users for showing read, unread, sent, and forwarded mail (for instance, rather than seeing an arrow for forwarded mail, you see the letter *F*). Eudora Sound Mover lets you replace Eudora's default sounds with custom sounds of your own. This utility duo only costs $2, so pony up your George Washingtons and download a copy today. (By the way, the author notes that there *is* another way to change Eudora's icons, but Eudora Fixer provides an easier, more elegant solution.)

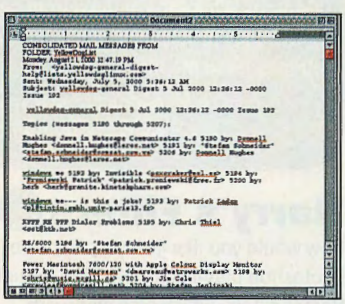


By clicking a few radio buttons, you can change Eudora 4.x's confusing icons in the Status field to more-sensible ones.

Price: $2
Download from: www.brain-sucker.com/cefesm.html

OE Many To Word

For the times you want to save the text of a series of emails, but don't want to go through the hassle of copying the text from each message, Allen Watson has come up with a great AppleScript solution: OE Many To Word. After moving this script to the Script Menu Items folder, you can select several emails, then choose OE Many To Word from the Scripts menu. Outlook Express will dutifully copy the contents of every selected email, headers and all, to a new Microsoft Word document.



This Word document represents 72 messages transferred from Outlook Express with no more effort required than selecting the messages and choosing an item from the Script menu.

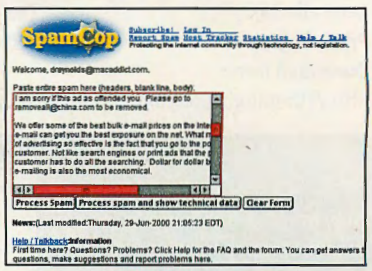
Price: Free
Download from: ftp://ftp.macemail.com/oe/OE_Many_Word_2.1.hqx

How to Install

To install an AppleScript that works with Outlook Express's Script menu, drop the script in the special Script Menu Items folder, which lives in the Outlook Express folder. To use the scripts with Eudora, you'll have to run them separately from within the program.

OE Script Bundle

This bundle of 14 AppleScripts adds lots of new features to Outlook Express 5.x, including spam control, sophisticated message deletion, and password protection for selected emails. Although the power behind each individual script is small, the combined effect is huge. Together, they'll turn Outlook Express into an email juggernaut.



Report spammers to the SpamCop Web site and keep the volume of unwanted bulk mail to a manageable level.

Price: Free
Download from: http://home.freeuk.net/neil.green

AppleWorks

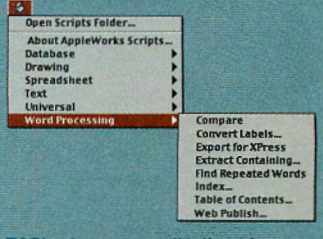
Like Microsoft Word and Excel, AppleWorks doesn't have a plug-in architecture. What it *does* have is AppleScript support, which comes in very handy for automating many AppleWorks tasks, making it so that you hardly need to lift a finger.

How to Install

Installing AppleScripts in AppleWorks is easy. Just drop the compiled script (or applet) into the Scripts folder, which lives inside the AppleWorks Essentials folder (in the AppleWorks folder). The next time you run AppleWorks, your new scripts will show up in the Scripts menu.

Enhancement Pack for AppleWorks

This collection of 40 AppleScripts (by T&B) works with AppleWorks 5 and 6 (as well as older versions of ClarisWorks). They add tons of abilities to AppleWorks, including several text, drawing, and financial tools, and a nice selection of universal tools that control AppleWorks as a whole.



T&B's shareware collection of AppleScripts adds new abilities to AppleWorks, including a way to prepare documents for export to QuarkXPress.

Price: $20
Download from:
www.tandb.com.au/appleworks/enhance

Microsoft Excel

Microsoft Excel doesn't have plug-ins in the strict sense of the term. What it does have (much to the delight of macro virus writers) is Visual Basic, a powerful scripting language that gives Excel abilities far beyond those of mere mortal spreadsheets. Programmers can embed Visual Basic macros into Excel spreadsheets, and by downloading workbooks with macros, you get spreadsheets with eerie powers. But that's not all—Excel also has a feature called add-ins. By dropping an Excel add-in into the Add-ins folder, you can give the program exciting new abilities.

How to Install

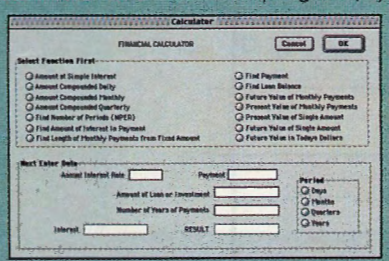
Installing macros is easy—just open the worksheet that has the macro embedded and run Excel from there. Often a button embedded in the Excel document activates the macro. You install add-ins as you would other plug-ins—just drop them in the Add-ins folder (located in the Office folder, inside the Microsoft Office 98 folder). In some cases, you may need to select Add-ins from the Tools menu, then enable the add-ins you want to use from that menu (you only have to do this once).

Complete Suite

This specialized Excel workbook by Jack Karnes contains 11 custom Excel macros to help you out, including a financial calculator, a currency converter, a calculation to determine the date of Easter in any given year, and an amortization schedule creator.

Price: Free

Download from: www.mindspring.com/~jackkarnes/jacmar2.html



The financial calculator is just one goodie embedded in this custom Excel workbook.

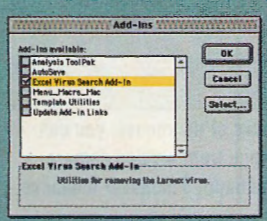
XL Menu Enhancer

This add-in (also by Excel guru Jack Karnes) adds several items to Excel's menus, giving you quick access to a financial calculator, a metric converter, and a currency converter (among many others). It also adds an item to the Views menu that shows all open files.

Price: Free

Download from: www.mindspring.com/~jackkarnes/jacmar2.html

Excel Virus Search Add-In



You can never have *too* much virus protection, and the Excel Virus Search add-in inoculates your copy of Excel against the Laroux and Laroux B macro viruses. This is good to have around.

Price: Free

Download from: www.microsoft.com

Installing the Virus Search Add-In might save you a run-in with the Laroux virus.

Microsoft Word

Like Excel, Microsoft Word doesn't exactly have a plug-in architecture per se, but you *can* add to its abilities using various macros.

How to Install

Installing a macro in Word is as simple as opening a document that has an embedded macro. These documents typically have buttons in a macro toolbar—you can click these to run the macro.

CD Label Creator

This specialized Word document by Andrew Freeman has embedded macros for creating your own CD labels—including a jewel-case insert. Very handy.

Price: $15

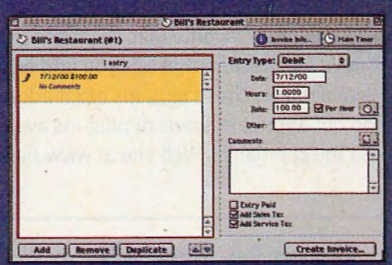
Download from: www.amfsoftware.com

Invoice Builder

This companion program to Microsoft Word helps freelancers track their billable time and interfaces with Word to produce nice, neat printable invoices.

Price: $45

Download from: www.mindspring.com/~hammer1/ib



Thanks to Invoice Builder, you'll never miss another collection opportunity.

Business Card Creator

Another template by Andrew Freeman, the Business Cards template will take the pain out of creating business cards.

Price: $15

Download from: www.amfsoftware.com

This Word template makes instant business cards—all you need to do is replace the words and graphics with your own.

Internet Assistant

This free update from Microsoft automates the process of saving Word documents as HTML pages—great for quick-and-dirty Web projects.

Price: **Free**

Download from: **www.microsoft.com**

QuickTime

Believe it or not, QuickTime itself has a plug-in architecture that lets you add new abilities to just about any QuickTime-enabled program, including the QuickTime player. But to get the most out of these add-ons, you'll want to have QuickTime Pro, which costs about $30.

How to Install

Installing new QuickTime effects is pretty straightforward—simply drop the effects pack extension on the System Folder. After you restart your Mac, your new effects will be ready to go. To use these effects in the QuickTime Player, you'll need to open the movie to which you want to apply the effect, choose Export from the File menu, and in the Options dialog box, select the QuickTime effect you want. Exporting the movie will apply the effect.

Effects Pack 1 to 3

With the help of Buena Software's three Effects Packs, you can get 30 new effects to use with your QuickTime-enabled applications. Twenty of these effects are filters, including Color Pass, a filter that extracts all colors except one from a movie; Jittery TV, which imitates the effects of bad reception; and Camcorder, which makes a movie look as if you're watching it through a viewfinder. Four of the effects are transitions, such as Radial Bands, a transition that radiates from the center and then wipes the image. Finally, six of the effects are compositing tools, such as Blue Screen, which lets you superimpose an element from one video on top of another video.

Price: $30 per pack
Download from: www.buena.com

While it's normally bad enough to have a TV with poor reception, for those who *really* like that sort of thing, the Jittery TV filter can add the effect to any movie.

FileMaker Pro

Everyone's favorite Mac database program also boasts a plug-in architecture that lets you add exciting new functions to FileMaker Pro. These plug-ins often address very specific needs. To find out about the scads of plug-ins available for FileMaker Pro, visit the company's Web site at www.filemaker.com.

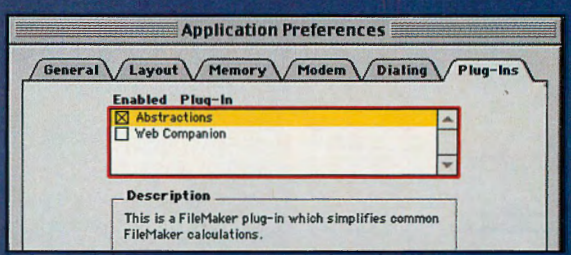
How to Install

To install a FileMaker Pro plug-in, move the file into the FileMaker Extensions folder, which lives in the FileMaker Pro folder. One thing to note—plug-ins for versions 5 and those for versions 4 and earlier don't always mix and match well, so make sure you have the right plug-in for your version.

Abstractions

This simple freebie from Murray's Freeware adds three new functions to FileMaker: it removes extra return characters, makes a field recalculate based on changes to another field, and pulls a substring out of a text field. The price is right, so you should give them a try.

Price: **Free**
Download from: **www.murrayc.com**

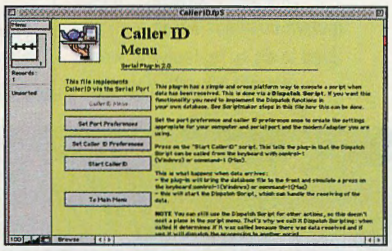


To make sure you have Abstractions loaded properly, choose Application from the Preferences submenu of the Edit menu in FileMaker, and then click the Plug-Ins tab. Make sure the check box next to the plug-in's name is checked.

Troi Serial

This plug-in from Peter Baanen of Troi Automatisering lets FileMaker Pro talk to devices hooked up to your Mac's serial port, making for all kinds of interesting possibilities. A few samples provided with the plug-in include a Caller ID database, a weight-from-scales database, and a terminal emulation database. It's a must-have for serious hardware hackers.

Price: $69
Download from: www.troi.com

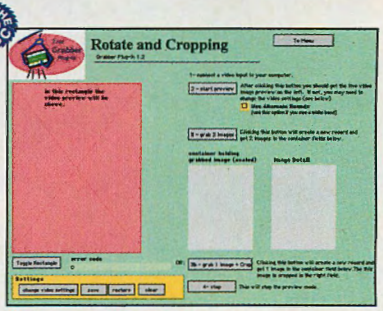


You can now keep a database of all of those irritating telemarketing calls.

Troi Grabber

Another great plug-in from Troi Automatisering, Troi Grabber lets you grab images from any QuickTime-compatible camera to bring into your FileMaker database. Some of the effective ways you can use this plug-in are for a Webcam, security, or event registration database.

Price: $79
Download from: www.troi.com



With a few clicks of the mouse, you can bring in an image from a video camera—making for one happy FileMaker database.

David Reynolds can't help but giggle and think of Beavis and Butt-Head when someone says "wood."

Discover True Compatibility

Connectix **VIRTUAL PC** delivers true compatibility by enabling you to run multiple operating systems on your Mac. With Virtual PC, you can run Red Hat Linux, Windows 2000, 98, 95, or PC-DOS from a window on your Mac desktop. You will be more productive by enabling your Mac to run PC programs, access PC networks, and share files with your PC-based co-workers or clients.

Connectix Virtual PC is a software solution that's like having a Pentium chip in your Mac. And, it's available in 5 different versions. Whether you need to run Red Hat Linux, Windows 2000, 98, 95, or PC-DOS on your Mac, Virtual PC makes it easy to get started because the operating system is pre-installed. Bridge the compatibility gap between your Mac and most PCs by using Virtual PC from Connectix.

To buy or for more information, go to www.connectix.com or call 1-800-395-1804

Connectix

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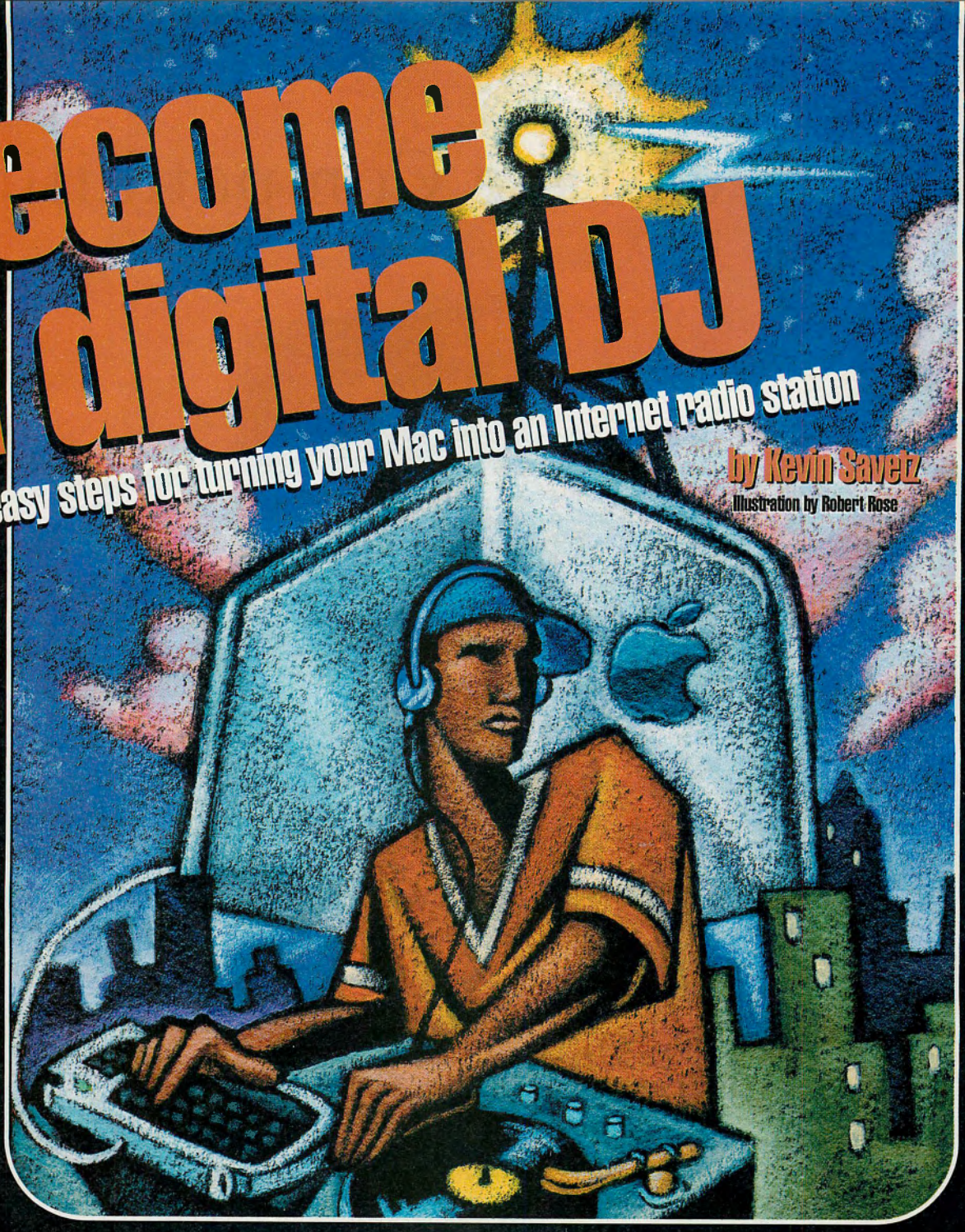
become a digital DJ

5 easy steps for turning your Mac into an Internet radio station

by Kevin Savetz

Illustration by Robert Rose



Find Audion 1.5, MACAST 1.0r2, N2MP3-1.5b3, SoundJam MP Free 2.1.1, and iStream 1.4.1 on The Disc.

Share your music with the *MacAddict* masses at www.macaddict.com/debate.

Back in the day, it seemed as if most children harbored dreams of becoming firefighters, teachers, or Luke Skywalker. But we had more noble aspirations: We wanted to share music with the masses. Luckily, it no longer takes a 100,000-watt transmitter and an FCC license to roll your own radio station—just a Mac and a moderately fast Internet connection. Here we show you, in five simple steps, how to get your own radio station up and running on your Mac using the shareware iStream. iStream will only stream premade MP3 playlists, so you can't do live streaming (although the makers of iStream are leaving that possibility open for the future). However, the software does allow just about anyone on the Internet to tune in—even PC users. That is, if you let them.

The Scoop on iStream

Price: 10-listener license, free
30-listener license, $15
60-listener license, $29.99

System Requirements:
100MHz or faster PowerPC
Mac OS 8.1 or later
Internet connection (56-Kbps or faster)

(Make sure to register the program from the Mac you intend to use as a server—once you register, that copy of iStream won't run on any other Mac.)

Step 1: Finding Music

The first thing you'll need before you can start broadcasting to the world is a collection of MP3 files. There are three ways to acquire MP3s.

Method 1: Dig into Your CD Collection

Extracting songs from a CD is called *ripping*, and turning them into MP3 files is called *encoding*. Although technically they're two separate processes, every program we've seen does both in one fell swoop. In the wide spectrum of MP3 rippers and encoders, the differences include ease of use, cost, and the sound quality of created files. Here are some of the best choices: N2MP3 (www.n2mp3.com, $34.95), SoundJam MP (www.soundjam.com, $39.95), MusicMatch (www.musicmatch.com, free), and BladeEnc (www.helsinki.fi/~pkamppur, free).

Method 2: Find It on the Internet

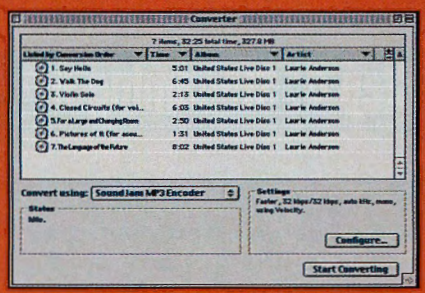
You can find music files at Web sites like MP3.com (www.mp3.com), Lycos MP3 Search (http://mp3.lycos.com), and MP3box (http://mp3.box.sk). Although we don't *advocate* illegal downloading of copyrighted music, we would be remiss not to mention Napster, the most popular way to get MP3s (though the service could shut down by the time you read this). There's no official Mac version, but you can download MP3s from Napster servers via Macster (www.macster.com).

N2MP3 offers drag-and-drop encoding and the ability to listen to music as it encodes.

Method 3: Do It Yourself

You can also stream MP3 files of your friend's garage band, a recitation of Robert Frost, or ambient sounds from underneath your house. Just plug a mike into your Mac's audio-in port, then use the latest version of SoundJam and its Record From Sound Input tool (under the Tools menu). Creating the music yourself is the best way to provide unique content and avoid landing in court (see "But Is It Legal?", p38).

SoundJam MP offers robust encoding and an easy way to downsample high-quality MP3s.



Step 2: Balancing Bandwidth and Bit Rate

Before you invite the world to tune in, you'll need to encode your MP3 files properly. Bit rate determines the amount of information that gets stuffed into the MP3 file. A higher bit rate means better-sounding music but much larger files. You'll have to do a little experimenting to find a rate that balances sound quality with the amount of bandwidth you can spare. Generally, a 56-Kbps modem can effectively serve only one listener at a time, while a 512-Kbps cable modem connection can serve up to eight or nine.

A popular bit rate for MP3 music is 128 Kbps because it produces CD-quality sound. But unless you (and your listeners) have tons of bandwidth to burn, 128 Kbps is too much data to stream to an audience. Michael Juarez, an iStream developer, suggests that the streaming Mac have an Internet connection of at least double the MP3 stream's bandwidth, times the number of simultaneous listeners. Say what? In real numbers, that means you can host a 56-Kbps MP3 stream with five listeners over a 560-Kbps connection—about the equivalent of DSL or cable modem (see "Bandwidth Tricks," below).

The other side of the coin is sound quality: A lower bit rate takes up less bandwidth, but it also degrades the sound by limiting tonal range and adding sound artifacts. According to Juarez, a reasonable lower limit for streaming audio is 56 Kbps for stereo, 32 for monaural.

Finally, make sure you encode all of the files you're streaming at the same bit rate—don't mix 32-Kbps and 64-Kbps files. Why? Some streaming MP3 players (such as WinAmp) assume that the bit rate of the MP3 stream never changes. If you encode the first song at 64 Kbps and the second at 128 Kbps, the latter will sound as if Alvin and the Chipmunks had recorded it. If the second song has a rate of 32 Kbps, it will play too slowly.

Bandwidth Tricks

This chart tells you how many listeners your Internet connection will support (this depends on transmit speed, not receive speed). The "Simultaneous Listeners" numbers are conservative—you may be able to squeeze in a few extra listeners at faster speeds.

MP3 BIT RATE	CONNECTION SPEED	SIMULTANEOUS LISTENERS
32 Kbps	modem (56 Kbps)	1
	ISDN (128 Kbps)	2
	ADSL or cable (512 Kbps)	8
	T1 (1,544 Kbps)	24
48 Kbps	modem (56 Kbps)	0
	ISDN (128 Kbps)	1
	ADSL or cable (512 Kbps)	5
	T1 (1,544 Kbps)	16
64 Kbps	modem (56 Kbps)	0
	ISDN (128 Kbps)	1
	ADSL or cable (512 Kbps)	4
	T1 (1,544 Kbps)	12
128 Kbps	modem (56 Kbps)	0
	ISDN (128 Kbps)	0
	ADSL or cable (512 Kbps)	2
	T1 (1,544 Kbps)	6

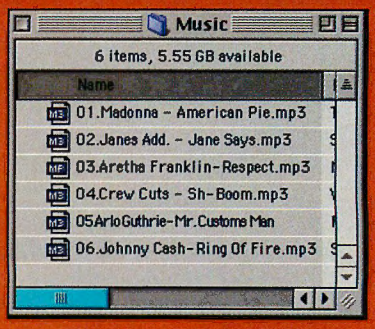
TIP If your connection isn't fast enough to serve the multitudes, try iStream Satellite (www.arcticsw.com/products/istream, free). This *reflector* program downloads your server stream and retransmits it on a faster connection. Run iStream on your home Mac and install Satellite on a machine with a fast hookup (say, your work Mac). Satellite will receive the MP3 stream from your home Mac, and the hordes will point their clients to Satellite—hogging your company's bandwidth, not yours.

Step 3: Storing and Organizing Music

You need to store all of your MP3 files in the Music folder within the iStream folder. iStream plays music in alphabetical order based on file names, so name the MP3 files in the Music folder carefully to determine the songs' playing order—you can start each name with a number. (Don't bother with subfolders, as the program will not dig into them in search of more music.) After the program finishes the last song in the playlist, it will start over with the first file.

Juarez suggests that you "act like a radio station" when it comes to storing and organizing music. "Start making routine schedules, and keep music on archival CD-ROMs. If you have Mambo Monday, you easily know what music you will need from a CD," he says.

The registered version of the program includes a playlist manager, which theoretically allows you to change the order of your songs without resorting to creative file naming (although we should note that the playlist function did not work for us—see "Shareware Woes," p39). Sadly, the program doesn't have a random shuffle mode.

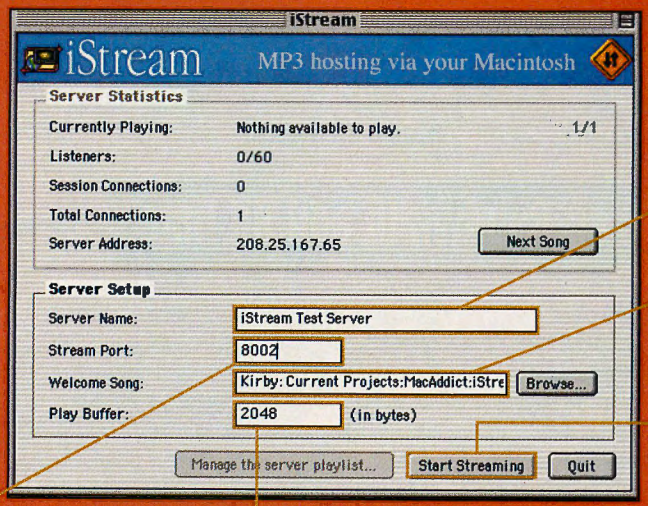


MP3 songs will play in the order in which they appear in the Finder's Name view, so name them carefully—start with a number to get them in the right sequence.

Step 4: Streaming It!

Now it's time for iStream to do its stuff. The first thing you need to do after launching the program is give your fledgling radio station a name—if we catch you using the default name, iStream Test Server, you will be punished accordingly. Next, you should create a Welcome Song. When listeners connect to your music server, they first hear the Welcome Song before getting dumped into the music stream. You don't need to use a song at all: The Welcome Song can be a smarmy radio-style identification, beat poetry, whatever you want.

Finally, you need to plug your settings into the Server Setup section of the main iStream window—see the guide at right.



Your radio station's name. Okay, so punish us.

The folder in which your Welcome Song is located.

On the air! Press the Start Streaming button and let the broadcast commence. If you get an error message, make sure you have pointed iStream to a Welcome Song. Then press Next Song, Start Streaming. This takes care of a number of problems.

Any number above 8,001. MP3 stream ports are usually on ports 8,001 and above—it doesn't really matter what port number you use as long as no other server on your Mac is using the same one.

A number that works well with your modem speed. The Play Buffer field controls the size of the MP3 data packets iStream sends. The default setting of 2,048 should work in most situations. However, if you have more bandwidth, you may want to bump up the buffer setting. Use the guidelines at right.

CONNECTION	BUFFER (IN BYTES)
14.4	512
28.8	1,024
56.6	2,048
64 ISDN	4,096
128 ISDN	8,192
Cable	16,384
T1	32,768
T3+	65,536

But Is It Legal?

So you're eager to set up an online radio station, but you're also wondering whether it's entirely legal. U.S. copyright law allows ripping CDs for your own use, but streaming them on the Internet for others to enjoy is a more complicated legal situation.

It is perfectly acceptable to stream music on the Internet in many situations. Examples of legal streaming include these situations: your own band wrote and performed the tune, the recording is in the public domain (this is very rare, according to the public domain music site www.pdinfo.com), or you licensed the music from the copyright holder. But simply ripping your favorite Zeppelin tunes from CD, then streaming them online, is an "unauthorized performance" that might earn you an angry cease-and-desist letter.

Streaming copyrighted music creates "problems on two fronts," says Terry Carroll, an attorney specializing in intellectual property law: "For the musical work (the song itself), this is deemed to be a public performance. In the absence of a license, it would likely be considered copyright infringement." The other issue is the digital aspect: Unlicensed digital performance of a recording may mean an additional infringement of the owner's rights and constitute another penalty.

Step 5: Tuning In

Your listeners don't have to be Mac users: There are streaming MP3 clients for Windows (including UltraPlayer MP3 and WinAMP), Linux (FreeAMP and Xaudio), and other operating systems. Just tell your listeners to connect to your Server Address: Stream Port using the Open URL function in their MP3 player (the main iStream window lists both the server address and the port). When people log on to the iStream server, they'll hear the Welcome Song; then they'll pick up from wherever the stream happens to be. If two people log on at two different times, they'll hear the same music.

Remember, iStream is simply a server—it transmits music but doesn't play it. To listen to your own radio station, you'll need a client that can play MP3 streams—choices include SoundJam, MACAST (www.macast.net), and Audion (www.panic.com/audion). You can use one of these programs on the server to listen to your own stream without taking up any bandwidth. To do so, tell your MP3 player to tune in to the Server Address:Stream Port.

In the Server Statistics section of the main iStream window, you'll see basic listener data, including the number of current listeners and the total number of connections the server has seen since you installed the software (or since you threw away the Preference file). However, don't expect Arctic Software to help you get the word out on your radio station. To acquire listeners, you have to tell folks to tune in. Just make sure you have the bandwidth to support the teeming masses sure to demand entrance to your very own Internet radio station.

Even your Windows-lovin' friends can tune into your iStream station. Here, a WinAMP user enjoys the sounds of Johnny Cash.

Streaming Caveats

You may encounter a couple of problems when it comes to running a streaming server at home.

*** Dynamic IP Addresses**—If you get your IP address through DHCP (or some other dynamic method), your server's IP address will likely change within a few days—or even a few hours. To fix this, you'll need to get a static IP address from your ISP, which typically costs a little extra. If you don't nail down a static IP address, your server's address will change periodically, and you'll have to keep your listeners up to date on that changing number.

*** Firewalls**—If your server lies behind a firewall—either a home version or a larger, industrial-strength one at the workplace—you'll have to punch a hole in that firewall for the IP address and port number where you've located your server. If your firewall is a home type, you can do it yourself; if the IT staff at work runs the firewall, you'll have to ask them to punch the hole for you. Otherwise, only people within the firewall can listen to your station.

Shareware Woes: 5 Problems to Watch Out For

If iStream was a radio station, it wouldn't be a hip, megacorporate station. It would be the funky pirate radio station running out of a van. As the owner, DJ, and programming director of such a station, you can expect to experience problems from time to time, because the program has bugs. You'll just have to work around them. Here's a rundown of the glitches you may encounter (although by the time you read this, Arctic Software might fix some of these).

1. The program crashes if you don't choose a Welcome Song and press the Next Song button before starting the stream.

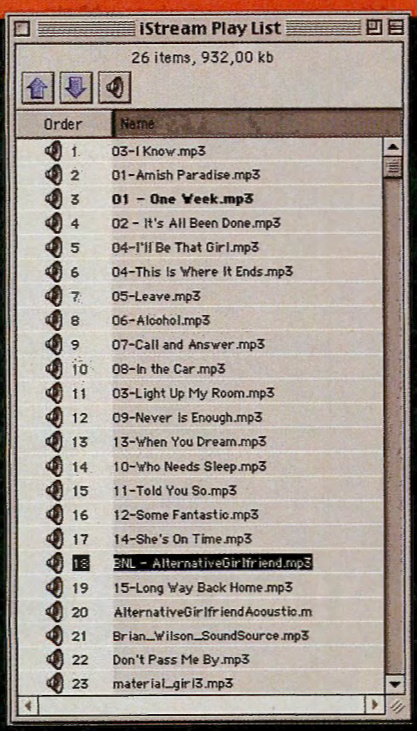
2. You must press the Start Streaming button to activate your station—there's no way to activate the stream automatically when you run the program.

3. Because of the program's cryptic error messages, you may have to consult the troubleshooting section of iStream's documentation quite often.

4. Although we dutifully paid the shareware fee, we had difficulty convincing iStream to accept the registration code—every time we started up, the program continued to berate us for not paying.

5. Registering is supposed to activate the playlist management feature (which lets you alter the song order without renaming files), but according to Arctic Software, iStream won't activate this feature until you upgrade to version 2.0 (not released as of press time).

Get used to this screen, which appears every time you run iStream—even after you've paid up.



This playlist window, which should allow you to change the song order without renaming files, didn't work for us. The developers have promised a fix in iStream 2.0.

Kevin Savetz (savetz@northcoast.com) is a freelance computer technology writer in Northern California. Kevin used to work at a local radio station, where he decided to air the uncensored versions of the foulest-mouthed rap music he could find. He no longer works there.

the bargain guide to buying...Beige?!

How little did you pay? Tell us at www.macaddict.com/debate.

The 11 best used Macs for the buck and how to get them up to snuff

Here's to the crazy ones—the square beige Macs with the round holes. You can add to them, upgrade them, coddle them, even paint them. They're different—they don't have USB. But you may still find they're worth your money—if you buy smart. Say you're looking for a new set of Mac wheels, but you're not interested in paying a price well above dealer invoice. That may be the right time to think about a used Mac—something in, say, beige or platinum. Something that offers power, upgradability, and an ugly enough case so that you can decorate it with bumper stickers or cover it with little half-melted army men. Can you really find any deals out there good enough to validate all that time you spend on eBay?

Darned tootin' you can. In this handy little guide, we've rounded up the top used Macs in five different categories, broken down by how well the little buggers compare in cost and features to some of Apple's more recent machines. And in most cases, we're talking about a computer that will work with that printer, trackball, external drive, modem, removable drive, and ADB widget, doohickey, or dongle you've got hanging around.

by Todd Stauffer **illustration by Tim Racer**

The Boom Box

WHAT YOU WANT: iMac DV with Harman-Kardon iSub
WHAT TO GET: Power Mac 6500 or Performa 6400
DON'T PAY MORE THAN: $350 (with 15-inch monitor) or $400 (with 17-inch monitor)

WHY THE 6400 OR 6500: The iMac's price is tough to beat. Even a $799 new basic-blue non-DV iMac has a lot to offer, including a 7GB hard disk, a Rage 128 Pro graphics card, and a 100MHz system bus.

Be that as it may, the iMac simply won't win any awards for nerd-lovin' upgradability. And how about the fact that once you get a Power Mac 6500 (or Performa 6400) up to iMac DV–like specs, you've still got room for a second SCSI internal drive, an external SCSI device, external serial devices, and if you can find one, an Apple TV tuner or Apple video-in card?

You should find a Power Mac 6400 or 6500 with a 15-inch—or even 17-inch—monitor for less than $350. The 6400 usually goes cheaper, but if you find a good deal on the 6500, snatch it up—it has a faster system bus than the 6400 (50MHz versus 40MHz), and it works with slightly quicker 60ns DIMMs, which means a little more speed for that hungry G3 upgrade you're going to install.

The 6400 and 6500 have a built-in subwoofer that, coupled with external speakers or an Apple AV monitor (with speakers on the front), makes them sound better than anything this side of the Twentieth Anniversary Mac. Both models also have an easily upgraded IDE hard disk, an extra 5 1/4-inch drive bay (for almost any sort of SCSI removable), and two—count 'em, two—7-inch PCI slots.

PHOTOGRAPH BY AARON LAUER

MAJOR UPGRADES

1. HARD DRIVE. A standard-issue 20GB ATA drive should only set you back $125 or less. (The Performa just supports EIDE speeds, so go with the cheapest drive you can find.) Hard-drive manufacturers include Quantum (www.quantum.com), Seagate (www.seagate.com), and Western Digital (www.westerndigital.com).

2. VIDEO CARD. The Performa 6400's video is pitiful (this model uses system DRAM for video), and the 6500 is anemic at 2MB of VRAM and minimal ATI 3D acceleration. Because you have a 7-inch slot, add an ATI Xclaim 3D card with 8MB of VRAM and TV-out ($99 street price, www.atitech.com), or go for a Formac Proformance III and 3D glasses ($399 SRP, www.formac.com)—you can't do this with *any* iMac.

3. PROCESSOR. You'll want a G3 upgrade for your 6400 or 6500—both Newer Technology (www.newertech.com) and Sonnet Technologies (www.sonnettech.com) offer these. To create a system that can challenge a new iMac, you'll need at least 350MHz, approximately $349. Also, make sure you look for the Upgrade Challenged or Level 2 cache model. The card replaces the Level 2 cache module on the logic board in these Macs, giving it a sneaky little push to G3 status. The downside is that the cache slot is a workaround, requiring a Mac OS extension you'll get when you install the card's software. This means these puppies are unlikely to make the leap to Mac OS X.

4. USB AND FIREWIRE CARDS. If you buy USB devices, add a USB PCI card—these cost $29 to $69, and you can get them from Macally Peripherals (www.macally.com), Ariston Technologies (www.ariston.com), and Keyspan (www.keyspan.com), among other places. For a FireWire-USB card, you'll hand over approximately $130. Orange Micro (www.orangemicro.com) and Sonnet, for example, make these cards.

THE COST OF UPGRADING

Power Mac 6500 G3/350, 64MB of RAM, 20GB ATA hard drive, 8MB of VRAM	
Power Mac 6500/64MB RAM with 15-inch monitor	$350
Add 20GB hard disk	$125
Add ATI video card with 8MB of VRAM	$99
Add G3/350 upgrade	$349
Add FireWire-USB PCI	$130
Total:	**$1,053**
Versus-iMac DV 400, 64MB of RAM, 10GB hard drive ($999), with Harman-Kardon iSub ($99 SRP, www.harmankardon.com)	**$1,098**

Finding Cheap Parts

The key to upgrading a used Mac is shopping around and finding parts on the cheap. Here are a few good places to search.

If you're buying new parts:
Dealmac.com—www.dealmac.com (offers the mydealmac service, in which you can personalize a home page that tracks pricing on new and refurbished items)
If you're buying used parts:
eBay—www.ebay.com
UseNet newsgroups—comp.sys.mac.wanted and comp.sys.mac.forsale (try www.deja.com to look up a newsgroup)—both groups allow you to post your own "Wanted to Buy" message.
If you're buying old versions of the Mac OS:
NexComp—www.nexcomp.com

Trans International has a neat Flash-based Web site and is a good place to scrounge for storage and adapters.

If you're buying RAM:
Ramjet—www.ramjet.com
Memory 2 Go—www.memory2go.com
If you're buying random upgrade parts:
Trans International—www.transintl.com (good for storage upgrades, SCA SCSI adapters, and so on)
Other World Computing—www.macsales.com (good for finding RAM, processor upgrade cards, video upgrade cards, and so forth)

The Power Mac G4 (Six-Slot)

WHAT YOU WANT: Power Mac G4 with PCI chassis
WHAT TO GET: Umax S900 or Power Mac 9600
DON'T PAY MORE THAN: $750 (Umax S900 with 64MB of RAM) or $900 (Power Mac 9600 with 64MB to 128MB of RAM)

WHY THE S900 OR 9600: Apple continues to fail us when it comes to two things: naming schemes—witness its recent release of the new multiprocessing Power Mac G4 models—and slots. The latest dual-processor Power Mac G4s sport up to 1GHz of performance, 1.5GB of RAM, 300GB of storage space—and three PCI slots. Let's see—that's a SCSI card for a RAID, a second video card, a high-end digital audio card, and—whoops! We're out. So where the heck can we get enough slots for all this and still have room for a DC30plus card (www.truevision.com) for some serious analog-to-digital video editing?

One way is to buy a G4 and a PCI chassis, but that ain't cheap. An even better idea is to obtain a Power Mac 9600 or a Umax S900, both of which offer six PCI slots and some drive bays—the 9600 has two 5 1/4-inch external bays, while the S900 has two 5 1/4-inch and two 3 1/2-inch external bays, plus two 3 1/2-inch internal ones. Both machines have memory upgrade potential: The S900 supports 1GB of RAM, while the 9600 can take 768MB. The S900 is the real steal—often going for $500 to $750 with extra RAM, and sometimes with a G3 card.

The Power Mac 9600 is the pricier choice, at about $900 for a bare-bones model. But the 9600 is a solid workhorse, offering 12 DIMM slots on the logic board. Upgraded to G4, the 9600 works like a charm when running Mac OS 9.x. According to Sonnet and PowerLogix (www.powerlogix.com), you can even run Mac OS X on the 9600.

PHOTOGRAPH BY AARON LAUER

MAJOR UPGRADES

1. PROCESSOR. For maximum performance you'll want to take either machine up to G4 specs; a 400MHz G4 daughtercard card costs $500. If you go for an S900 model, check out www.supermac.com /supermac/index.html for help getting over the Mac OS 8.1 to 9.x hump. Also, watch out for the E 100 card that comes in some models—offering Ultra SCSI and 100MB Ethernet on a single card, it runs into some compatibility snags with G3 and G4 upgrades and other PCI cards. XLR8Yourmac has the scoop at www.xlr8yourmac.com/tips /Umax_E100.html.

Newer Technology recently warned that its competitors' G4 upgrade cards have compatibility issues with dual PCI bridges (required for six PCI slots), and claimed that its own Maxpowr cards handle the problems best. Read up at the Newer site and check other upgrade manufacturers' tech support for their take on the issue—or save yourself a little trouble and opt for a high-end PowerPC G3 upgrade.

2. RAM. You'll likely find these models already have at least 64MB of RAM, but for real design or multimedia tasks you'll want at least 192MB, if not more. A new 128MB DIMM will set you back $215 or so, although you'll find used 168-pin 70ns DIMMs available for less. The 9600 can use either Fast Page Mode (FPM) or Extended Data Out (EDO) DIMM modules; with the Umax, you're safer with FPM memory, according to NewerRAM's GURU (www.newerram.com/Memoryguide/default.htm). The 9600 offers a slight performance increase if you interleave RAM by adding identical modules two at a time to fill a single memory bank.

THE COST OF UPGRADING

Power Mac 9600 G4/400, 192MB of RAM, 18GB SCSI hard drive, six slots	
Power Mac 9600	$900
Add 128MB of RAM (new)	$215
Add 18GB SCSI hard drive	$300
Add G4/400 upgrade	$500
Add FireWire-USB PCI	$130
Total:	**$2,045**
Versus-Power Mac G4/400, 64MB of RAM, 20GB Ultra ATA hard drive ($1,799) with four-slot Magma external PCI chassis ($1,400 to $1,570 SRP, www.magma.com)	**$3,199 to $3,369**

Playing the eBay Game

Bidding at eBay can seem new and exciting—that is, until you lose three, four, or ten auctions in a row. The problem is pretty simple: People bid late, they hover, and they use mean tricks such as auction watchers and personal eBay tracker pages to make sure they trounce you in the end. So here's how to beat them at their own game.

1. *Watch carefully.* If you put a bid in early, you'll need to keep checking in, especially as the end of the auction approaches. Serious eBay bidders tend to wait until the last few minutes to register their bids in order to keep the price lower and not tip their hand. In fact, why anyone on eBay offers a bidding period of longer than three days, we'll never know.

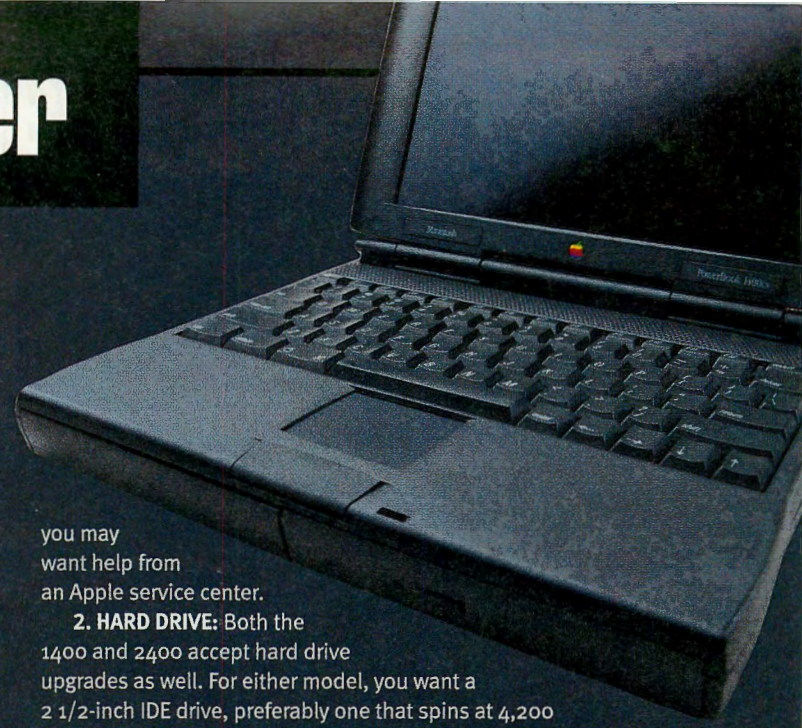
2. *Use the tools.* When you register for eBay, you can use the My eBay feature to keep track of items you've bid on and auctions you just want to monitor. Likewise, Internet Explorer 5.0 offers an Auction Manager feature that can work with eBay, Amazon, and other auctions. Internet Explorer will even notify you when the bidding changes or when an auction is about to end.

3. *Know your limits.* Whenever you bid on an eBay auction, you have the option of entering your top bid—this is the highest price you're willing to pay. eBay will augment the bidding in increments up to your top bid, as long as others keep bidding you up. If the final bid at the end of the auction is at or below the maximum you entered, you win. Just make sure you enter your genuine, 100 percent, don't-want-it-otherwise top bid.

The iBook Killer

WHAT YOU WANT: iBook
WHAT TO GET: PowerBook 1400 or 2400
DON'T PAY MORE THAN: $650 (1400) or $1,000 (2400)

PHOTOGRAPH BY AARON LAUER



WHY THE 1400 OR 2400: Can you get a killer portable in a tiny, lightweight package that beats the pants off anything Apple currently offers? No, not really. But if you're willing to make a compromise or two, you can upgrade your way to a G3-based PowerBook for quite a bit less than you would spend on a new PowerBook—and still have more expandability than an iBook.

One of the best choices for this endeavor is the PowerBook 1400 series, which tends to sell for $500 to $650. However, there are two things to watch out for: First, the 1400c is the active matrix line; the 1400cs series (except the 1400cs/166 model) features a passive matrix screen, which isn't as bright and crisp. You can probably live with the 1400cs, but the 1400c doesn't command much of a premium anymore, so get that model if you can. Second, the 1400 is limited in the amount of RAM it can accept (64MB tops, but only 48MB if you leave in the Apple-installed 16MB module), and the RAM modules are pricey. You'll find your best deal is a used PowerBook 1400 that already has 48MB, 56MB, or 64MB of RAM installed. As an added bonus, the 1400 features a fun-lovin' clamshell that lets you add personality by swapping in colorful little panels on top of the PowerBook case. The 1400 is heavy (6.7 pounds) but pretty compact, which can make it easier to carry than some of the newer, lighter, but bigger PowerBooks and iBooks.

For real portability, though, you want the PowerBook 2400. Unfortunately, the 2400 is tough to find and comes at a premium—between $750 and $1,000 for a PowerPC 603e–based PowerBook! Still, it weighs only 4.4 pounds, which explains its continued popularity.

MAJOR UPGRADES

1. PROCESSOR: A new round of PowerBook 1400 G3 upgrades is now available from Sonnet, at $400 for a 333MHz model and $500 for a 400MHz model. That's a little pricey, but you can also find used upgrades for $250 or less. As for the 2400, the only new G3 processor upgrades that remain on the market are very expensive ($800 to $1,400), available from Mac Components Engineered (www.powerbook1.com). You may also find used upgrades on eBay or Usenet, but we officially forewarn you that the upgrade is very tough—you may want help from an Apple service center.

2. HARD DRIVE: Both the 1400 and 2400 accept hard drive upgrades as well. For either model, you want a 2 1/2-inch IDE drive, preferably one that spins at 4,200 rpm to keep the heat down. The 1400 is easier to upgrade than the 2400, but you'll need good instructions for both. Again, MCE is a great resource, offering special drives, kits, and instructions for getting inside your PowerBook.

3. EXPANSION BAYS AND SLOTS. Another way to turn iBook owners teal with envy is to use the expansion bays. On the 1400, you can swap out the CD-ROM drive for a VST Zip drive, still available new for that model ($219.95 SRP, www.vsttech.com). Likewise, the 1400 offers a special internal slot for a video and/or an Ethernet card—those aren't available new, but you can find them on eBay. And both the 1400 and 2400 support PC Card–style expansion cards, allowing you to add modem and Ethernet capabilities—you can get such cards from Farallon (www.farallon.com). Also, you can upgrade the PowerBook 2400 (via MCE) to support CardBus-compatible cards. Once upgraded, the 2400 supports PC cards that add USB or SCSI capabilities.

THE COST OF UPGRADING

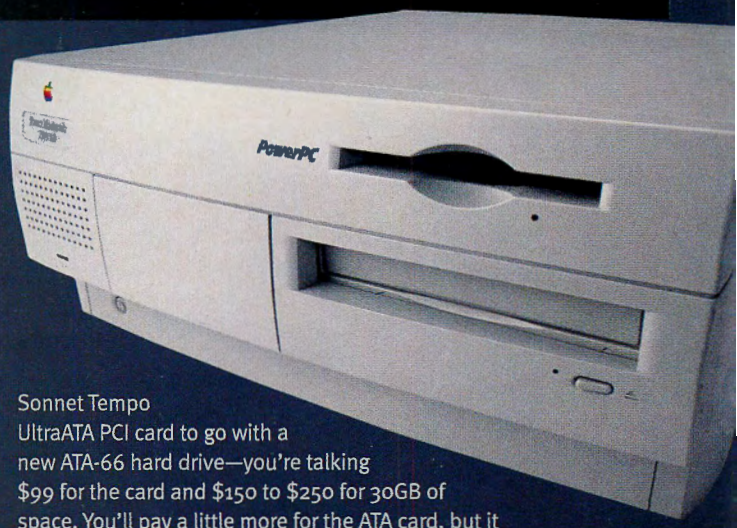
PowerBook 1400c G3/333, 48MB of RAM, 12GB hard drive	
PowerBook 1400c	$650
Add G3/333 upgrade	$400
Add 32MB RAM module	$150
Add 12GB EIDE/ATA hard drive	$250
Total:	**$1,450**
Versus-iBook/300, 64MB of RAM, 6GB hard drive	**$1,599**

4. Bid safely. Don't forget to check the reputation of the seller, read the specs listed on the page, and write to the seller with any questions *before* you bid. You should also read your eBay (or other auction) agreements carefully, including information about fraud, age limits, and so on. For instance, did you know that eBay insures transactions for up to $200 against fraud? If the item you're buying costs more than $200, you may want to use a credit card or escrow service instead of sending a money order or check. If you use a credit card, you might want to read your card's agreement to see if it specifically covers fraud in online and/or auction transactions. Some do, some don't.

Bid and you shall receive...that is, if you play the game right. Buying used machines on eBay—like this PowerBook 2400—is a matter of patience, persistence, and knowing your limits.

The Primer-Painted Hotrod

WHAT YOU WANT: Power Mac G3/300 (beige)
WHAT TO GET: Power Computing PowerCenter or Power Mac 7500
DON'T PAY MORE THAN: $175 (PowerCenter) or $250 (Power Mac 7500)



WHY THE POWERCENTER OR 7500: Maybe you just don't like colored computers. Maybe you believe if your computer case doesn't have screws, it's not worth opening. Or maybe you want a G3 for less than $500. Well, you can fulfill all of your wishes and still have room for graphics cards, RAM, and almost anything else you can think of.

Power Computing's PowerCenter is a squashed little beige bug of a Mac, usually equipped with a CD-ROM drive that doesn't quite match the case's putty color. You can usually find models with at least 64MB of RAM for less than $200—and sometimes in a minitower case with a few drive bays open. The Power Mac 7500 usually won't set you back much more than the PowerCenter, plus it includes RCA AV ports on the back and the ability to digitize analog video. It's also a good choice because it shipped with a cheap PowerPC 601, which means the cost of a used machine will be lower. An extra bonus: This model sports PCI slots.

MAJOR UPGRADES

1. PROCESSOR. Although it may sound strange, you want to get the machine with the *slowest* processor, because you'll be pulling that processor out and replacing it. You can get some serious speed for daughtercard-based Macs these days—we're talking a G3/300MHz upgrade for $150 and a G3/400 upgrade for less than $250! These processor upgrades come from any of the big manufacturers: Sonnet, Newer, XLR8 (www.xlr8.com), or PowerLogix. You can even buy supercheap upgrades from Other World Computing. Our recommendation: Get a card from Sonnet if you don't want to play with dip switches and control panels. If you're into playing with such things (overclocking, for instance), take your pick.

2. RAM. Both models support up to 512MB of RAM with four DIMM slots in the PowerCenter and eight DIMM slots in the 7500; many machines have at least 32MB and often 64MB of RAM already.

3. HARD DRIVE. You'll also want more drive space—you can either stick with SCSI and add another drive (about $200 for 10GB), or add a Sonnet Tempo UltraATA PCI card to go with a new ATA-66 hard drive—you're talking $99 for the card and $150 to $250 for 30GB of space. You'll pay a little more for the ATA card, but it will give you a lot more storage space for cheap ATA drives.

4. VIDEO. You can attain Power Mac G3–level graphics for about $150 SRP in the form of an ATI Rage Orion 128 with 16MB of VRAM. Bigger, badder cards such as the ATI Nexus (32MB of VRAM) can be had for around $250 SRP, or you can move up to a 3dfx 5500 for $330 SRP (www.3dfx.com), giving you a dual-monitor G3 monster Mac with more storage and killer video than the beige G3!

PHOTOGRAPH BY AARON LAUER

THE COST OF UPGRADING

PowerCenter G3/300, 64MB to 96MB of RAM, 30GB hard drive, 16MB of VRAM	
PowerCenter 180 minitower	$175
Add 32MB of RAM	$105
Add 30GB hard drive plus ATA card	$250
Add ATI Rage Orion, 16MB VRAM	$150
Add G3/300 upgrade	$150
Total:	**$830**
Versus-Used Power Mac G3/300 (beige), 64MB of RAM, 8GB hard drive, 4MB of VRAM	**$1,000**

Would You Like a Printer with That?

What's the *right* deal when it comes to used printers? First off, a used inkjet—especially a USB model—probably isn't it. With a new HP DeskJet 930c selling for under $200 and the dime-a-dozen Epson 740 USB dropping under $100, it's tough to recommend a cheap used inkjet—it's simply not worth the hassle of bidding and waiting. As for laser printers, though, you might get lucky. Look into these deals.

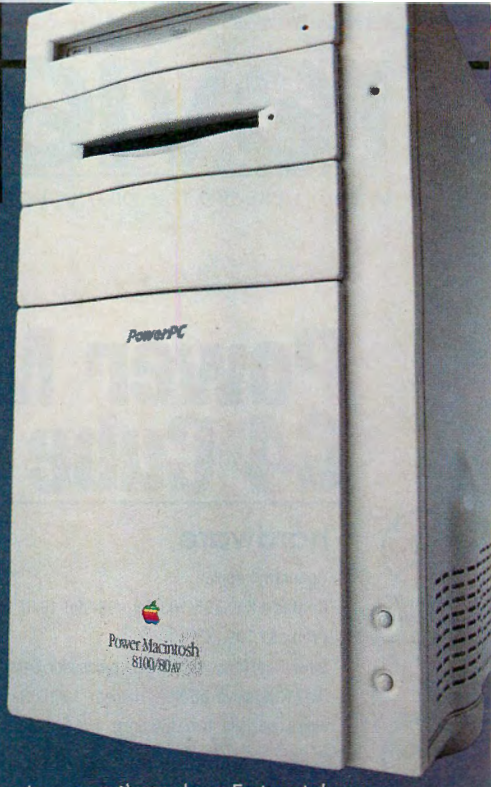
1. *LaserWriter IIg.* This PostScript laser printer comes Ethernet-ready and can emulate 600 dpi for graphics printing. The toner is pretty inexpensive, and upgrades (to speed up the logic board and add RAM, for instance) abound. The problem? The IIg is 45 pounds! We recommend visiting a refurbishing shop or a local ad or user group sale to avoid the $40 to $50 in shipping charges. You should find a bare-bones LaserWriter IIg for $100, or a tricked-out one (with Ethernet, logic board upgrade, and 8MB of RAM or more) for $200 tops.

The IIg is heavy, but it's a great deal.

2. *LaserWriter Pro 630.* This lovable, small-business printer offers at least 8MB of RAM, comes with Ethernet, supports both PostScript and PCL, and features 600-dpi printing. It's got a better, faster print engine than the IIg, plus it works on pretty much any LAN, even if you've got a PC mixed in the bunch. The best part is the auction price—usually around $150 to $250, plus $25 to $40 for shipping.

3. *LaserJet 4000TN.* Got a bigger network to feed? For $600 to $750 you can get a LaserJet 4000TN, which offers Mac and PC compatibility, 17 ppm, 1,200 dpi, and all the options you'd expect in a big network printer—envelope feeders, paper trays, and $80 toner cartridges.

NuBus Wonder Mac



PHOTOGRAPH BY AARON LAUER

WHAT YOU WANT: A good deal
WHAT TO GET: Power Mac 7100AV, 8100AV, or Radius 81
DON'T PAY MORE THAN: $90 (7100AV), $150 (8100/80AV with 32MB to 64MB of RAM), or $125 (Radius 81)

WHY THE 7100AV, 8100AV, OR RADIUS 81: If you've got NuBus cards you still want to use, you need a NuBus Mac. Fortunately, NuBus Macs are cheap and take to upgrades pretty nicely. The 7100 and Radius 81 (one of the first Mac clones) are both good choices—a nice compromise between size and price. For a little more, you could get a Power Mac 8100, which is what we really recommend.

The 8100 offers three NuBus slots, supports 264MB of RAM, and has a 5 1/4-inch expansion bay open. It's not the easiest Mac to pry open and upgrade, but after you've done it once or twice you'll get the hang of it. Meanwhile, you've got a great server machine and router (with multiple slots for Ethernet cards), and a nice multimedia machine (with AV in, plus maybe a Radius Pivot card and monitor).

MAJOR UPGRADES

1. PROCESSOR. The 8100 can take upgrades up to G4, including cards available from both Newer and Sonnet. If you've got an AV model and you want to keep the AV card, move it to an available NuBus slot and attach it to the upgrade card—both Newer and Sonnet have made this possible on their cards. Prices range from $199 for a low-end G3/250 card to $499 for a G4/360. To get the most out of your upgrade, you should buy an 8100/80, which has a 40MHz bus—this will give you top speed for upgrading to G3 or G4. Oddly enough, newer 8100s with 100 and 110MHz processors have slower system buses, meaning your G3 or G4 upgrade will run slower!

2. VIDEO. You can find some great used NuBus cards for video—the old SuperMac VideoSpigot was a fun little add-on, as were some graphics cards from MicroConversions, SuperMac, Targa, and Radius. There are pretty much no NuBus upgrades left on the market, but if you're a bargain-basement type, you'll love shopping for these used $5 and $10 upgrade cards (see "Finding Cheap Parts," p41).

3. RAM. A lot of Power Mac 8100 models will already have at least 32MB of memory, if not more—after all, many an 8100 had a former life as a production machine. You'll need 72-pin SIMMs (80ns or faster), and you can usually find 32MB to 64MB of that kind of RAM for $50 to $100 on eBay.

4. HARD DRIVE. If you can get away with the 1GB or 2GB drives these Macs offer, you can skip this upgrade, but most of us need extra space these days. Fortunately you can get a standard-issue 9GB SCSI drive (the IBM Deskstar (www.ibm.com) or Seagate Barracuda, for instance) for less than $200. Scan Dealmac's Storage archive (www.dealmac.com/sections/storage) for the latest prices.

THE COST OF UPGRADING

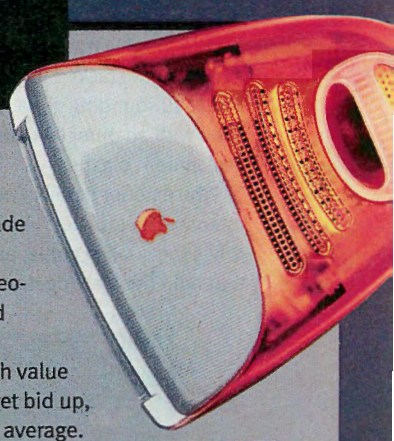
Power Mac 8100AV G3/250, 96MB of RAM, 9GB SCSI hard drive	
Power Mac 8100/80AV	$150
Add G3/250 upgrade	$199
Add 64MB of RAM (used)	$100
Add 9GB SCSI hard drive	$200
Add three NuBus cards	$10 a pop (usually)
Total:	**$679**

Why Not a G3? Or an iMac?

There's a downside to the wonderful world of Macs—they tend to keep their value, even on the used market. Despite the fact that you can buy a new G4/400 for $1,599, it's still tough to get a blue G3 for less than a grand. Even a beige G3, depending on its specs, can go for four digits. And lest you forget, the basic beige G3 shipped with relatively low amounts of RAM and disk space, and mediocre video, so you're still looking at $300 to $400 in upgrades (especially if you want to play games on it), putting you into low-end G4 territory. That's why, for the most part, we don't recommend buying a used G3. That said, if you see a good deal, go for it. If you can grab any sort of Power Mac G3 for well under a grand, you've got a machine that's probably worth it, as it does support IDE drives and use fairly cheap RAM, and it should have PCI slots available.

What about the iMac? Both Newer Technology (www.newertech.com) and PowerLogix (www.powerlogix.com) are offering G3 upgrades for the tray-loading iMacs, and Newer is even offering a G4/466 card. Yowza! But are these colorful bubble-computers worth it? A first-generation iMac can spec out nicely on everything except graphics performance. You can replace the hard disk (at standard ATA pricing) and upgrade the processor. The rev A and B models also give you the option of adding a video-out card, a serial port, or even a low-end Voodoo card.

The problem: eBay bidders put a high value on those iMacs! Bondi blue iMacs still get bid up, almost inexplicably, to $550 or more on average. Other tray-loaders can reach $700. Add in the hard disk upgrade ($150 or more) and the price of a G3 upgrade (at least $350), and suddenly you're paying a grand for a Mac that specs out a whole lot like a $799 iMac with better video, more RAM, and faster system bus speeds.



A tangerine 333MHz iMac went for $720 on eBay recently...almost the price of a brand-new entry-level iMac.

Todd Stauffer (www.mac-upgrade.com) is the author of more than 20 books on computing, including *Mac Upgrade and Repair Bible*, second edition (IDG Books, 2000).

reviews

With hardware this pretty, you'll have to dress up.

Power Mac G4 Cube

Get two, put some fuzzy carpet on them, and hang them from your rearview mirror.

PHOTOGRAPHY BY AARON LAUER

hardware

Company: Apple
Contact: 800-795-1000 or 408-996-1010, www.apple.com
Price: $1,799 (SRP)
Specifications: 450MHz G4 processor, 64MB of RAM, 20GB hard drive, DVD-ROM drive, 56-Kbps modem, 10/100Base-T Ethernet, Harman-Kardon digital speakers, two USB ports, two FireWire ports

FREAKIN' AWESOME! The most valuable products, the coolest gizmos.

SPIFFY A solid offering. Overall a good investment.

YEAH, WHATEVER Neither recommended nor rejected. Some might like this, but we weren't impressed.

BLECH! We want the time we spent testing this back.

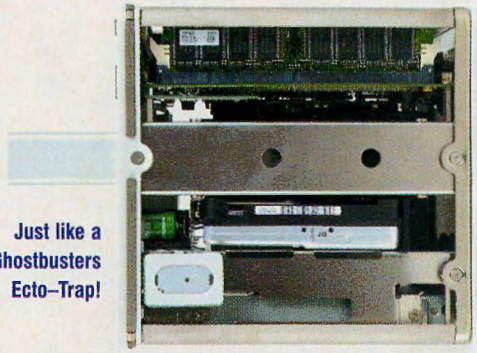
Talk to us at www.macaddict.com/debate.

Depending on how you look at it, desktop Macs have been either very stagnant or very innovative over the past year. Designwise, Apple has kept our beloved platform moving along at a furious clip with new colors, new plastics, and new form factors. Inside these pretty cases, however, processor speeds, disk throughput, graphics acceleration, and system I/O haven't changed in the slightest in the year 2000. Whether you think the Mac's current line makes forward strides or stands relatively still will make all the difference in how you view the new Power Mac G4 Cube. Apple's compact hexahedron embodies the Mac's current dichotomy.

You can assess most of what's new and cool about the Cube just by looking at it. It's small—roughly the size of two children's lunch boxes stacked together. It's also sleek, surrounding a graphite-colored inner shell with an outer layer of smooth, transparent plastic.

The exterior detail is wonderfully intense. The top-slot–loading DVD-ROM drive, the cooling vents, and the very bolts that hold the Mac together look more like planned aesthetic elements than functional necessities. The power button isn't even a button. You turn the Cube on and put it to sleep by simply touching a certain spot on the completely smooth, flat top surface. A subtle light throbs underneath this area when the Cube powers up. (The downside is that objects placed on top of the Cube—such as a cat who likes to sleep on a warm supercomputer—can make your Mac accidentally turn on or go to sleep.) Overall, the Cube's simple, elegant, well-integrated exterior is far superior to anything we've ever seen wrapped around a motherboard.

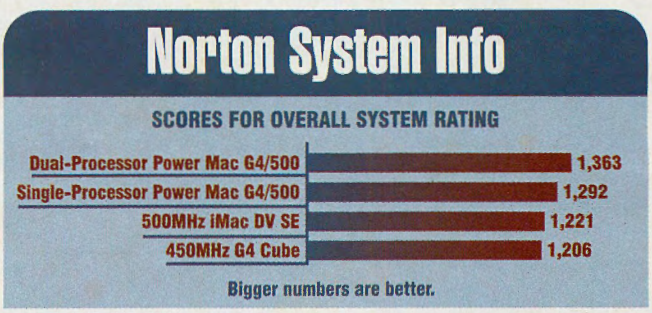
On a cursory inspection, you'll miss a few of the Cube's exceptional design elements. For one, the Cube has no fan, so except for the DVD-ROM drive's occasional swoosh and some clicks from the hard drive, it's dead quiet. Likewise, you can pull out the Cube's inner core with ease—very cool. Push on a sturdy handle at the bottom of the Cube to remove the guts of the machine quickly. This gives you fast access to the most upgradable internal components—the AirPort slot, the RAM, and possibly the video card (if a replacement card becomes available). If only the pullout design made a vacuum sound as you pulled the Mac apart, our inner child would be truly satisfied.



Just like a Ghostbusters Ecto-Trap!

A few minor flaws smudge the Cube's otherwise wonderful physical layout. Hook up the Cube for power, plug in Ethernet, attach a keyboard, a monitor, and the included Harman-Kardon speakers—and the back of the Cube becomes as profusely corded as that of any PC. And since Apple has designed the small Cube for placement on your desk, this tangle will likely end up sitting right in front of you. Additionally, the Cube sports a large external power supply, roughly half its size.

As for performance, the Cube performs...well, almost *exactly* like the G4 towers introduced in August 1999—over a year ago (to look at the updated dual-processor G4s, see p48). This isn't surprising, as it's essentially the same, right down to the size of the hard drive. In our Unreal Tournament, Norton System Info, and Photoshop benchmarks, the Cube yielded scores about the same as those of a first-generation G4 desktop. Also, the Cube



comes prepackaged with a pathetic 64MB of RAM, so if you buy one, you'll want to upgrade it (we recommend a healthy 196MB).

If anything, the Cube is missing some of the technical advantages of the original G4s. Most obviously it has a deficit of PCI slots and expansion bays, but you'll notice another interesting absence—audio I/O ports. The Cube offers no audio-in alternative, but does address audio out with the USB speakers. The only complaint we have about these is the delayed startup chime (because these speakers connect through USB, there is a slight delay in sound at startup, as it takes a few seconds for the USB extensions to load). The lack of audio-in is truly annoying, and so far USB or FireWire solutions are few and far between.

PHOTOGRAPHY BY AARON LAUER

The oversized power supply: Hide it under your desk.

For the right user, the Cube's small, quiet beauty will totally eclipse the fact that in terms of performance, it's last year's G4. It's not too expensive, it's got respectable power under the hood, and with its external monitor and easily upgraded components, the Cube is the perfect choice for someone who needs more than an iMac. Some Mac users will find the Cube a poor substitute for a dual-processor G4 tower at almost the same price. Others will see in it the perfect blend of internal and external functionality.
—*Robert Capps*

good news: Compact. Quiet. Fast. Beautiful. **bad news:** No speed or performance surprises. Inconveniently large external power supply. No PCI slots. Inadequate amount of RAM.

www.seemebuyme.com/ma1101

Video Performance

Average Frame Rate Playing Unreal Tournament (in frames per second)

Bigger numbers are better.

Studios and Cinemas

The new Apple Display Connector lets you run your monitor sans power cord, but prevents you from using the new displays on older machines.

To complement the graphite elegance of the G4 tower and Cube, Apple offers three very slick monitors—a 17-inch CRT Studio Display, a 15-inch flat-panel Studio Display, and a 22-inch flat-panel Cinema Display.

Both of the flat panels are thoughtfully crafted monitors—they include powered two-port USB hubs and an easy-to-adjust backside support. Very bright and very sharp, they don't suffer from the limited viewing range of older LCD monitors. Their price tags ($999 for the 15-inch Apple Studio Display and a whopping $3,999 for the 22-inch Apple Cinema Display) make them strictly luxury items—but man, what luxury.

The 17-inch Apple Studio Display is a work of art in its own right. Encased in glassy-clear plastic, this display kicks out crisp images at high resolutions and refresh rates. The $499 monitor has a flat-front screen, which makes for more pleasurable viewing All of these monitors feature Apple's new Apple Display Connector, which draws power from the Mac, eliminating the need for a power cord. The downside is that you absolutely *must* have a brand-new Mac to use one of these connectors. 3dfx has said it will make a PCI-based video card that supports the Apple Display Connector technology, but it has not announced a release date. For now, the only way to take advantage of one of these slick displays is to use the built-in Rage Pro graphics card.

Flatter than the earth in 1392.

in review

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Dual-Processor Power Mac G4

hardware

Company: Apple
Contact: 800-795-1000 or 408-996-1010, www.apple.com
Price: $3,499 (SRP)
Specifications: Dual-processor 500MHz G4, 256MB of RAM, 40GB hard drive, DVD-RAM drive, 56-Kbps modem, 10/100/1000Base-T Ethernet, two USB ports, two FireWire ports

PHOTOGRAPH BY AARON LAUER

To make up for topping out at 500MHz (unlike the Wintel gigahertz competition), Apple's new line of G4s adds a second processor.

In response to the gigahertz butt-kicking that it has endured recently (delivered by the likes of AMD and Intel, no less), Apple added a second G4 processor to its top two Power Mac G4 desktop models. The logic is that if one 500MHz G4 is fast, then two should run circles around anything out there. That's not quite true, as it turns out.

When running programs specially modified to use both processors (such as Adobe Photoshop and Casady & Greene's SoundJam), the dual-processor Power Mac G4/500 edges out any hardware Apple has ever released, and it holds its own against a 1GHz Pentium III system. The problem is, most Mac OS software (including Mac OS 9) doesn't have a *clue* as to what to do with the second processor, so it often sits there just relaxing and producing heat (see "Photoshop Face-Off," below, for the numbers).

The second G4 in the new desktop line won't be loafing for long, however, because Mac OS X knows how to handle a second processor very well. So those who buy a multiprocessor machine now will have a ready-made hardware upgrade once they install Mac OS X.

Other than adding the second processor, the G4 line has undergone only minor changes. These models seat the dual processors on a single daughtercard that plugs into the motherboard via a special connector—the ZIF socket of previous models is a thing of the past. Also, the third internal FireWire port is missing from the motherboard.

Apple has a great update in the dual processor Power Macintosh G4, but so much of its potential is just that—potential. When Mac OS X unleashes the full power of the second G4 processor next year, this machine will really come into its own.

—David Reynolds

good news: Room to grow. Built-in upgrade for Mac OS X. No extra cost for second processor. iMovie 2. New hardware diagnostics CD.
bad news: Second processor is mostly a deadweight. Keyboard lacks some important features.

www.seemebuyme.com/ma1102

The Mouse Is Hot, the Keyboard's Not

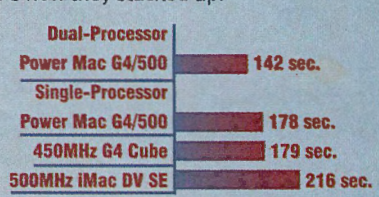
Since the introduction of the iMac's less-than-stellar keyboard and mouse a few years back, we've been waiting for a revamp. While the new optical mouse is the best Apple peripheral in years, the keyboard is lackluster.

The mouse's design is simply stunning, matched only by its functionality. After a few minutes of use, you'll get addicted to this buttonless mouse with no ball—and its optical imaging navigates your cursor even on soft surfaces such as couches and beds.

The keyboard, on the other hand, is not so great. This full-size extended keyboard, with a great touch and killer plastics, is missing a few important features. First, Apple has removed the power key. Although Apple points to the power buttons on the new monitors and G4s as suitable replacements, you won't find these adequate if you keep the G4 under your desk and you have a monitor that lacks a power key. Second, the keyboard's cable is about two feet too short. Again, if you don't keep your G4 on your desk and you don't have a USB monitor, you'll need an extension cable or a hub. Third, the Caps Lock key doesn't give you any indication whether it's on or off—no light, no menu bar symbol, nothing.

Photoshop Face-Off

The dual-processor G4/500 is a killer Photoshop machine, because Photoshop is one of the handful of Mac applications that actually knows how to use the second processor. Even so, this machine is only marginally faster than a single-processor G4/500. We ran a series of Photoshop actions on each test machine. Here's how they stacked up.



Smaller numbers are better.

500MHz iMac DV SE

hardware

PHOTOGRAPH BY AARON LAUER

Let it snow, let it snow, let it snow.

Company: Apple
Contact: 800-795-1000 or 408-996-1010, www.apple.com
Price: $1,499 (SRP)
Specifications: 500MHz G3 processor, 128MB of RAM, 30GB hard drive, DVD-ROM drive, 56-Kbps modem, 10/100Base-T Ethernet, two USB ports, two FireWire ports

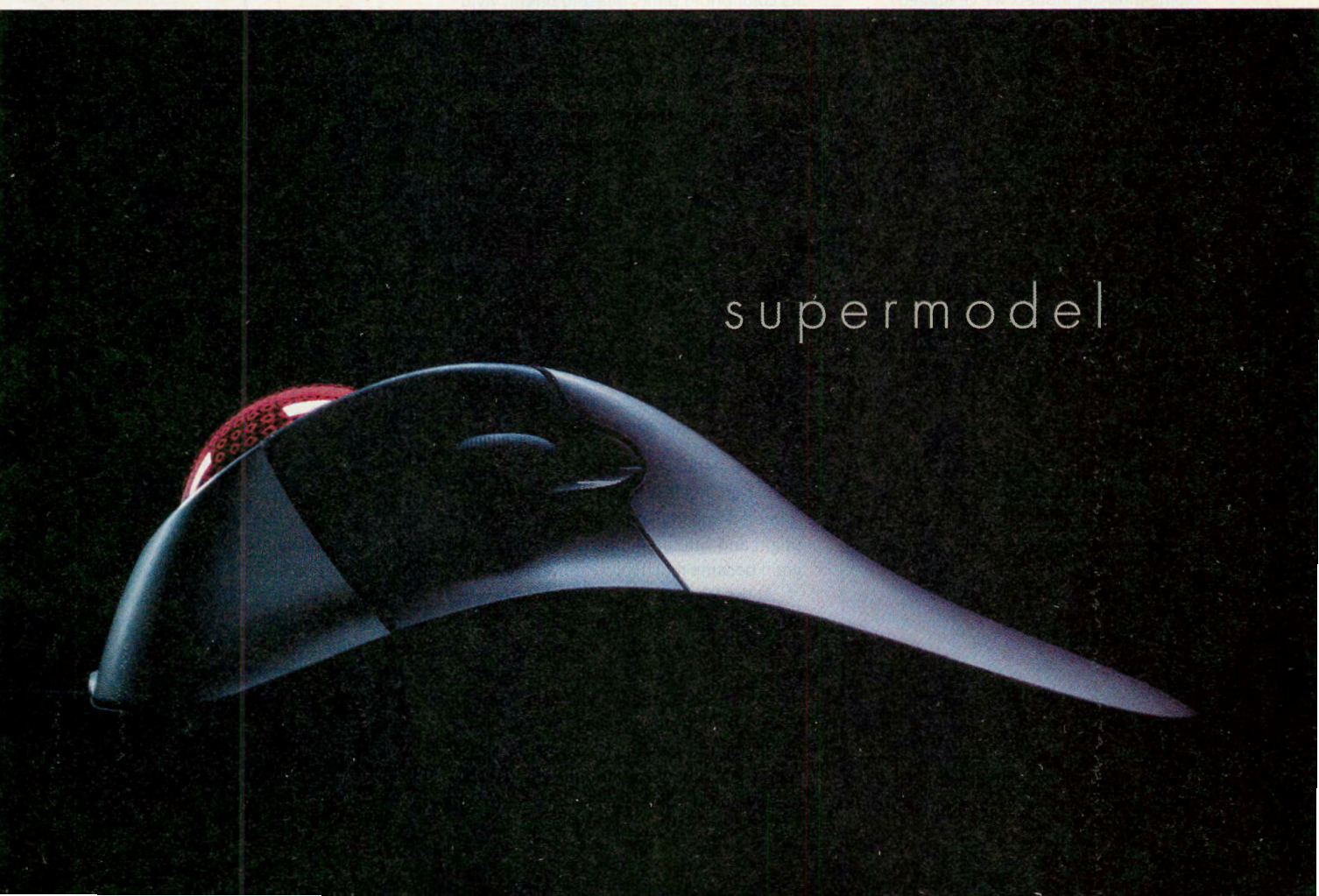
To understand what has changed in the latest revision of the iMac DV Special Edition, check out the speed of its G3 processor and the new snow color (the older graphite color is also still available). That's it. If you knew the old model, you know the new one—nothing else has changed.

The iMac's rough edges remain intact. It still handles video mirroring through a VGA-style port, so iMac owners can't use the new Apple Displays. The just-adequate Rage 128 Pro graphics chip still has an anemic 8MB of VRAM, with no upgrade path—so even the highest-end iMacs are still disastrously poor gaming systems. Serious gamers would be well advised to spend a few hundred dollars more for a Cube or low-end minitower. As in the previous version, the fanless iMac case increases the difficulty of making any internal changes (other than adding RAM)—in fact, it's nearly freakin' impossible.

Still, if you're not a gamer and you don't like mucking about inside the case, you may find the iMac DV Special Edition a perfectly fine machine for your needs. When you're working with applications not yet optimized for the Velocity Engine or for multiple processors (and that's still most of them), the 500MHz G3 performs only a hair slower than the 500MHz G4. For the vast majority of productivity applications, the new iMacs deliver impressive speed at a very reasonable cost.—*Ian Sammis*

good news: Zippy 500MHz G3. Good software bundle.
bad news: Only 8MB of VRAM. Components difficult to upgrade.

www.seemebuyme.com/ma1103



Lexmark Z32

hardware

Company: Lexmark
Contact: 888-539-6275, www.lexmark.com
Price: $99 (SRP)
Requirements: G3 300MHz or faster, Mac OS 8.6 or higher, 64MB of RAM, 12MB of free hard disk space, built-in USB support

PHOTOGRAPH BY AARON LAUER

For a buck under a Ben Franklin, the Lexmark Z32 prints text at close to laser-printer quality.

We just couldn't stay mad at Lexmark's new entry-level Z32 inkjet printer. Its installation could have gone more smoothly, but it quickly won us over with its speedy, high-quality printing. Though its graphics capabilities aren't spectacular, the Z32 is good enough to substitute for a laser printer in small offices, and ideal for most families and college students.

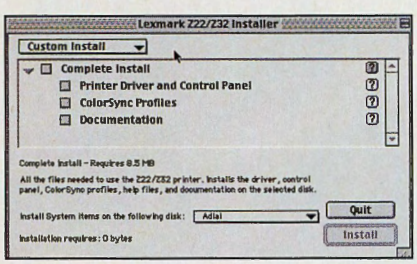
The Z32's nondescript beige exterior may disappoint Mac users spoiled by the sleek looks of the iMac and G4 Cube, but the printer is surprisingly light compared to some monster models we've lugged around, and its plastic casing feels very sturdy and well made.

The Z32's Mac-friendly installer software offers such features as custom install and uninstall, but the installer couldn't find the Chooser without help and abruptly quit in the middle of calibrating the nozzle heads during our first attempt. When we tried to print, the software told us it couldn't find the printer, even though we'd followed instructions and selected the printer in the Chooser beforehand. We had to run the program three times in a row before we could get the printer to work. (In all fairness, our second attempt at a clean install ran flawlessly.)

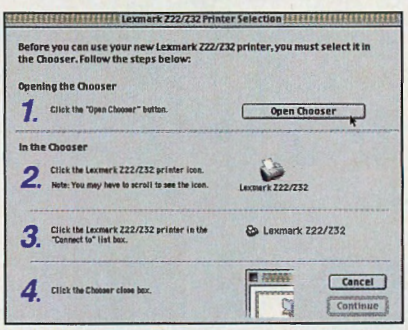
Once up and running, the Z32 did an exceptional job of printing text. In approximately 20 seconds, it produced a 600-dpi page of text so crisp it could have come from a laser printer. Individual letters lacked even the slightest hint of fuzzy edges or misalignment. In its quick-print mode, the Z32 produced the same page in 16 seconds, with lighter-colored text but the same immaculate quality.

The Z32's graphics printing wasn't nearly as impressive, especially at lower resolutions, but it did reasonably well with a few different test photos from our digital camera. In high-quality mode, with a maximum resolution of 1,200 by 1,200 dpi, its color photo prints boasted bright, vivid colors and fine details. Pictures printed on glossy photo paper looked like the real thing at arm's length, though closer scrutiny revealed significant graininess and some slight banding in red and blue areas. When printed on plain paper, the colors remained bright and saturated, but the banding and grain became much more noticeable.

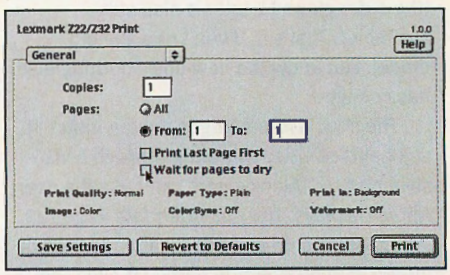
At the lower-quality 600-dpi mode, smooth edges became disappointingly jagged and pixelated no matter what kind of paper we used. Faces started to look like magnified icons, and leafy trees became clumps of ugly green pixels. The lower-quality output was fine for a throwaway color proof, but not something you'd want to send to Grandma.



The Z32's installer software boasts a full Mac interface, but has a few bugs under the hood.



Look, Ma—no restart! Just select the Z32 icon in the Chooser and you're good to go.



Better click the Wait For Pages To Dry box, unless you *like* having ink smeared all over your papers.

The Z32 suffered from a few other shortcomings as well. Most noticeably, black ink takes an unusually long time to dry. Pages touched within 15 seconds of rolling out of the printer smear and smudge with alarming ease. The Wait For Pages To Dry option in the standard printer dialog box may alleviate this problem.

We also wish Lexmark had included some bundled print or photo software, as many of its competitors do with their similarly priced printers. Instead, Lexmark asks Z32 owners to pay up to $40 for additional titles chosen from a limited list. Of the 15 titles, 7 weren't even available for the Mac.

Nonetheless, the Lexmark Z32 is a solid value. It probably won't satisfy artists and photographers who demand perfect images. But if you have fairly simple printing needs and the patience to work through an installer glitch or two, chances are you'll learn to love the Z32.

—Nathan Alderman

good news: Fast printing. Laser-quality text. Low price.
bad news: So-so color prints. Buggy setup. Smudgy ink.

www.seemebuyme.com/ma1117

Scrabble

fun & games

Company: MacSoft
Contact: 800-229-2714 or 612-249-7600, www.wizworks.com/macsoft
Price: $29.99 (SRP)
Requirements: PowerPC 132MHz or faster, Mac OS 8.1 or later, 32MB of RAM (64MB recommended), 60MB of free hard disk space (260MB recommended), 4X CD-ROM, 800 by 600 color display with thousands of colors

Scrabble's main game board stays true to the original, and it's easy to read.

With buckets of blood pouring from some Mac games, it's nice to know other titles take the higher ground. MacSoft's Scrabble is one such game—it's fun and playable for the whole family.

Scrabble presents a 3D board with various textures and backgrounds and large, easy-to-read tiles. The programming sticks to classic Scrabble rules (no proper nouns, no place names, and so on), and lets you play against up to three opponents, human or cybernetic. You can play against the computer at Novice to Champion levels, or against other Mac users over AppleTalk or TCP/IP. However, you can't take on the Windows world over a network.

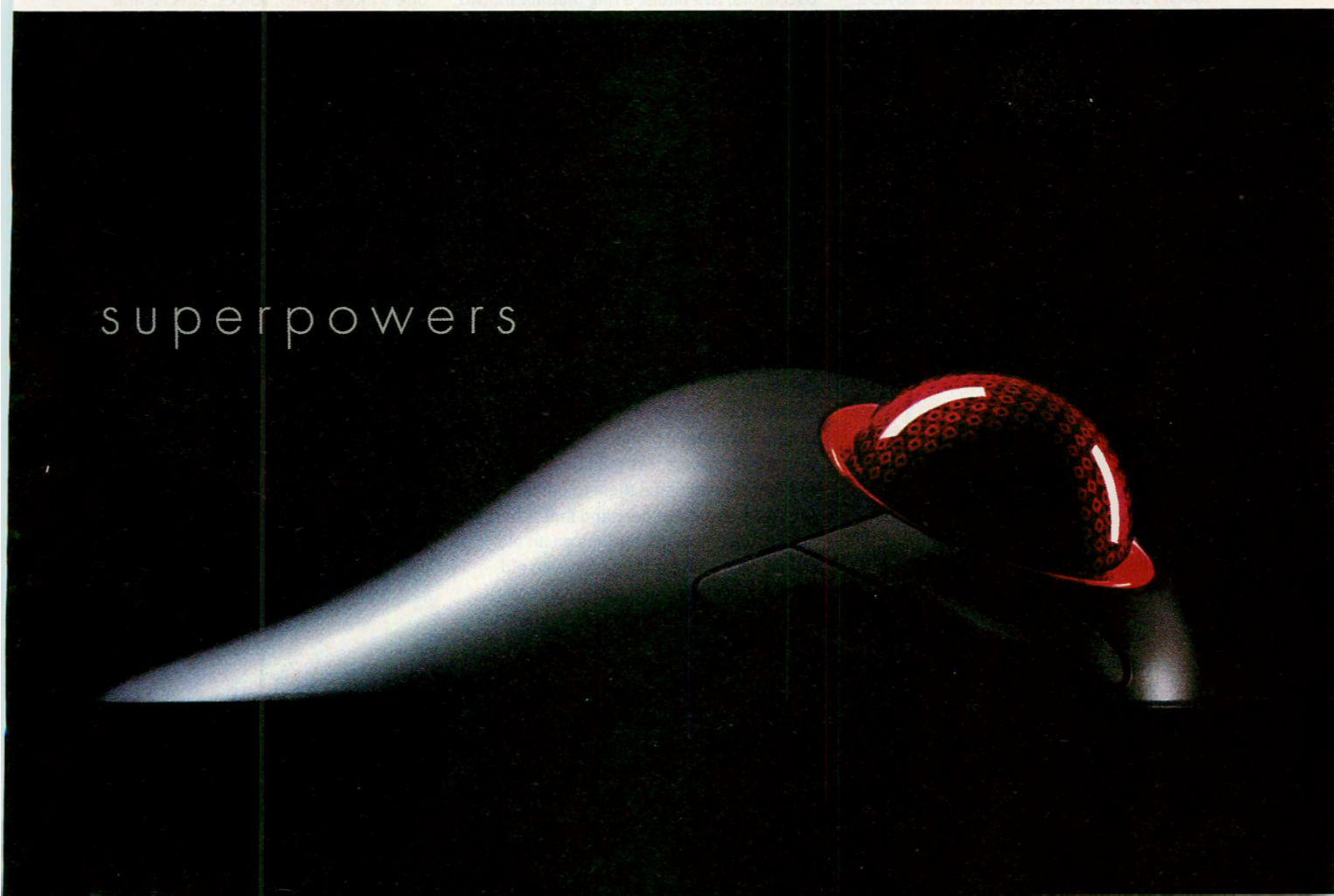
We found the game intellectually challenging and easy to use. If you get stuck, it offers anagrams, a built-in dictionary, and hints. You may find the latter a little too helpful—we eventually turned them off. The lounge-style background music became a little grating after a while. We appreciated the option to replace it with our own MP3 collection.

Unfortunately, Scrabble demonstrated a couple of bugs. The game crashed twice, and the function that picks random tiles after every turn failed once. And finally, winning the game is rather unsatisfying. All you get is a window saying you've won, a slightly sour-sounding, "Thank you for playing," and some weak cheering.

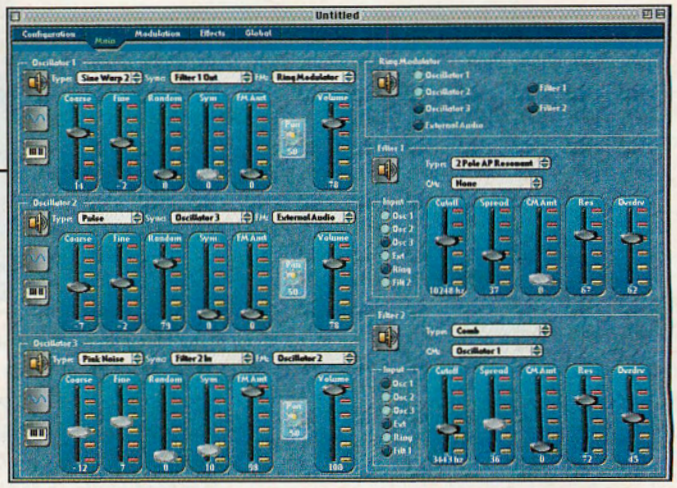
Overall, if you're looking for a good family game, Scrabble is worthwhile.
—Mark Shuchat-Marx

good news: Adjustable skill level. Plays MP3s in background.
bad news: A few bugs. Unsatisfying finish.

www.seemebuyme.com/ma1110



Retro AS-1 2.0



audio

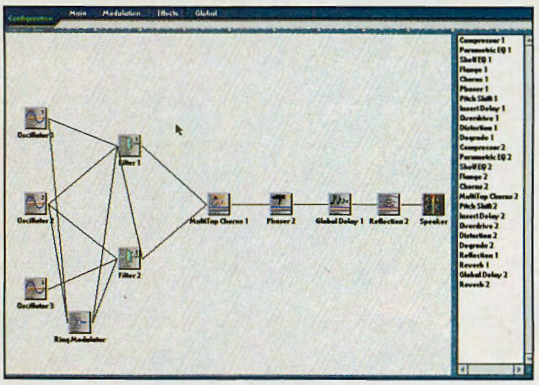
An intuitive old-school interface in the Main Editor page brings back the 1970s without all of the cables.

Company: BitHeadz
Contact: 831-465-9898, www.bitheadz.com
Price: $259 (SRP)
Requirements: PowerPC 200MHz or faster, Mac OS 8.1 or later, 64MB of RAM, 40MB of free hard disk space, CD-ROM, 800 by 600 color display

FIND A DEMO of Retro AS-1 2.0.2 on The Disc.

BitHeadz impressed us with version two of Retro AS-1, a virtual analog software synthesizer with up to 64-voice polyphony, 1,400 sounds, and full-sound-editing capability. If you've got a limited budget and you're willing to dedicate some time to this fairly complex package, Retro AS-1 won't disappoint you.

While samplers record sounds—a doorbell, a car starting, a person singing, and so forth—that you can manipulate and play back, synthesizers like Retro AS-1 create sounds by manipulating audio waves and tones with various user-configurable tools. You can record or play live Retro AS-1 sounds via MIDI or digital audio in most applications, including Steinberg Cubase, Emagic Logic, and Digidesign ProTools 5 (not the LE/Digi001 version, unfortunately).



Choose from the many available tools, custom-route them, and totally confuse yourself in the Configuration page of the Retro AS-1 Editor.

Installing from the CD is a simple process. When you first install, send the challenge code that appears onscreen to BitHeadz, which will send you a real serial number within days. (You're granted 30 days of full access while you wait.) The Retro control panel configures preferences such as audio and MIDI I/O, CPU usage, and velocity engine optimization for G4 users (like us). We tested Retro AS-1 on a 450MHz G4 with 512MB of RAM. Does the Velocity Engine option really matter? It's hard to say. We didn't notice a significant speed difference.

Retro AS-1 consists of four applications: Keyboard, Editor, MIDI Processor, and Mixer. Keyboard allows synthesizer play from the computer keypad. We tried it without problems, although we prefer an external controller, which Retro supports.

Editor is where you manipulate synthesizer sounds. For detailed tweaking, its five-window layout gives you three oscillators, two filters, a ring modulator, two inserts, and global effects for each sound (see "Tools of the Trade," below). The fully programmable configuration of these tools offers powerful open architecture and, unfortunately, potential frustration for beginners. Creating sounds gets complicated fast, but you can save each configuration and start fresh when you get lost. Save formats include Retro (accessible in all major sequencers) and AIFF.

Editing sounds on the Retro AS-1 was a positive experience; the tools' combined effects created lush tones. But prepare yourself—editing takes time. Great sounds didn't reach out and grab us; we had to do a lot of work altering and adjusting the various oscillators' parameter settings. The virtual effects were less than realistic, but with time we adjusted them to our liking. The GUI's easy-to-understand faders and buttons resemble the buttons on an old analog hardware synthesizer—even old-school musicians could figure it out. We created sounds and triggered them with ease in Cubase.

The Mixer and MIDI Processor applications support live play via the Processor's controlling-keyboard setup and the Mixer, handling up to 16 selectable presets. Yes, Retro AS-1 does work as a live instrument, but keep in mind the need for onstage computers and MIDI gear in a live performance—it requires more equipment than sampling sounds and triggering them independently via a MIDI keyboard.

Overall, Retro excels in the home studio, adding depth without killing your CPU. It has agreeable and plentiful stock tones, but what really matters is what you do with them. Retro's edit and sync options make this a worthy package. Even users of version 1.x may want to consider upgrading—2.0 offers more power, voices, effects, and support options than before.—*Andrew Freid*

good news: Optimized for the Velocity Engine. Open architecture. Compatible with most sequencing and hard disk recording software.
bad news: No ProTools LE/Digi001 Support. No printed manual. A bit complex for beginners.

www.seemebuyme.com/ma1120

Tools of the Trade

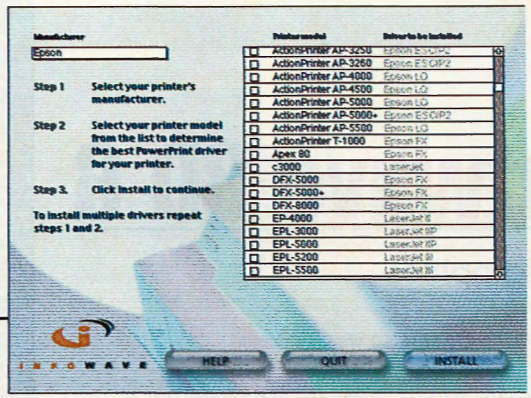
In combination, these tools create high-quality sounds identical to those utilized in most hardware and software synthesizers.

1. **OSCILLATOR:** A sound wave that repeats at variable rates and patterns.
2. **RING MODULATOR:** Often adds metallic or tinny flavors to sound.
3. **FILTER:** Basically, EQ. Boosts or cuts specific frequencies in the sound.
4. **EFFECT:** Often utilized in the overall sound, producing delay, chorus, or reverb, among other options.
5. **ENVELOPE:** Manipulates sound over time, allowing sustained tones to transform into complex structures.

PowerPrint Mobile Edition

utilities

Company: InfoWave Software
Contact: 800-463-6928, www.infowave.com
Price: $99 (SRP)
Requirements: G3 processor or faster, Mac OS 8.1 or later, USB port



You'll see PC printers galore in the easy-to-use PowerPrint installer—it puts 1,600 options at your fingertips.

For more than ten years, InfoWave's PowerPrint has enabled Macintosh users to print to non-Mac printers. PowerPrint Mobile Edition comes with a USB-to-parallel cable and drivers for over 1,600 PC printers. It also provides a handful of goodies you'll find useful when you're on the road.

You install drivers only as you need them. Select one or more printers from a list and click Install, and the drivers appears in the Chooser. PowerPrint supports inkjet, dot-matrix, and laser printers, and even some multifunction printers. It includes a scanning utility called ScanTastic and a Fax Setup utility for certain Canon and HP multifunction models.

However, PowerPrint Mobile Edition can't print using PostScript, a requirement for PostScript fonts and encapsulated PostScript (EPS) graphics. For printing these fonts, you'll have to rely on Adobe Type Manager (ATM)—and EPS graphics will always come out jaggy.

InfoWave spices up the package with travel goodies, such as Delorme's Street Atlas CD-ROM, a retractable 8-foot phone cable for Internet connections, an Ethernet crossover cable, and PowerPrint Tech Info—a searchable database of troubleshooting problems.

Overall, PowerPrint Mobile Edition is an attractive package that can equip your iBook or PowerBook to deal with the PC printing world.—*John Rizzo*

good news: Handles hundreds of PC printers. Easy to use. Good documentation. Handy travel goodies. **bad news:** Doesn't work with PostScript printers. EPS prints come out jaggy.

www.seemebuyme.com/ma1122

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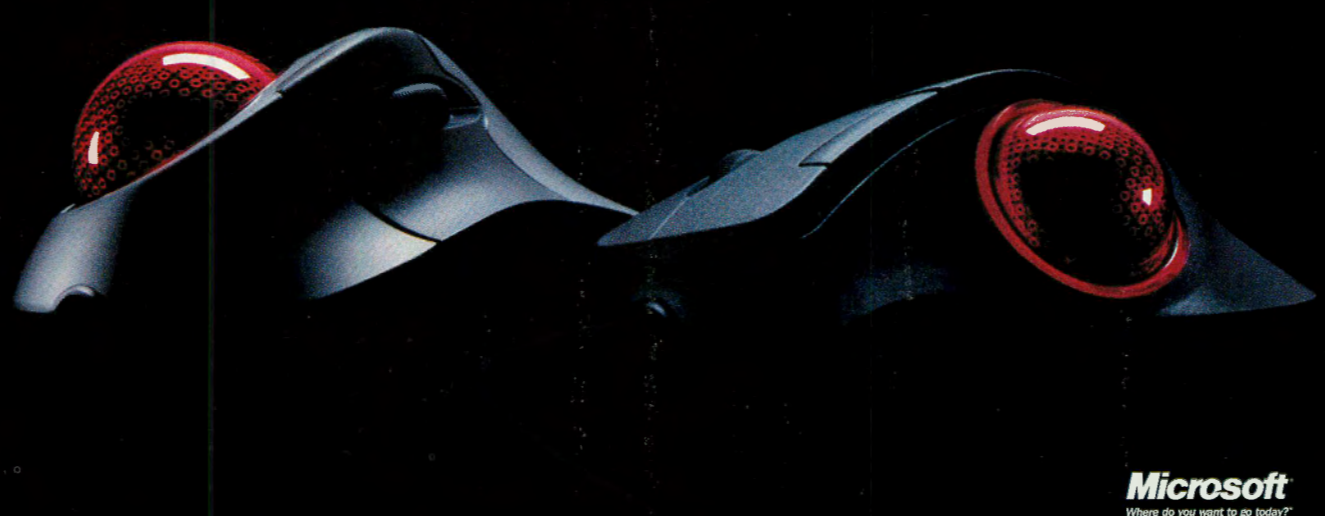

Microsoft
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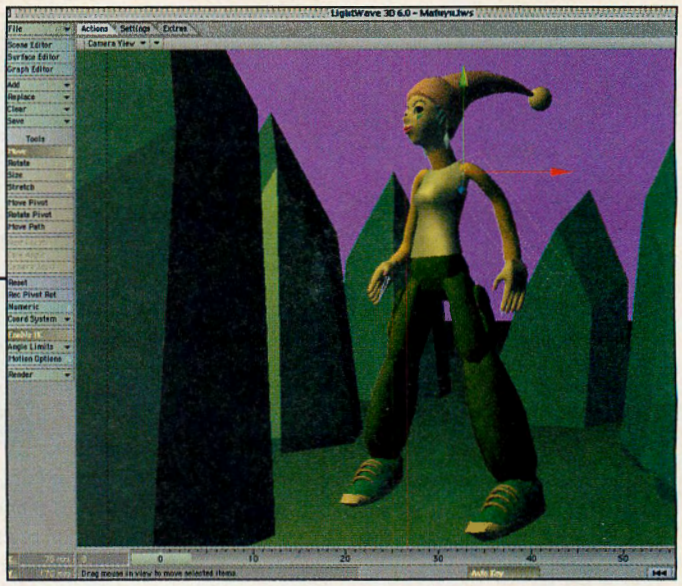
Lightwave 3D 6

design & graphics

Company: NewTek
Contact: 800-862-7837 or 210-370-8000, www.newtek.com
Price: $2,495 (SRP)
Requirements: Power Mac (G4 recommended), Mac OS 8.6 or later, 64MB of RAM (256MB recommended), 400MB of free hard disk space, CD-ROM



It's elfin Lara. Arrange and animate objects in Lightwave's Layout module.

When Newtek introduced Lightwave 5.0 for Power Macintosh back in January 1996, it was the first—and only—truly professional-level, production-tested 3D modeling and animation program to appear for the Mac. Despite some lackluster upgrades over the ensuing four years, and some serious competition from rival Cinema4D XL, Lightwave has maintained its position at the top, and will until Alias/Wavefront's Maya Complete for OS X arrives in 2001.

Although it comes with a hefty price increase, Lightwave 6 is an essential upgrade for any serious animator. This version contains hundreds of new features—among the most notable are subdivision surfaces and point weighting for the polygonal modeler, improved radiosity (see "Is It Live or Is It Radiosity?", p55) and a fast caustics engine for the already unmatched renderer, redesigned inverse kinematics and bones systems for character animation, and an interface that has finally departed the Amiga and MS-DOS dark ages.

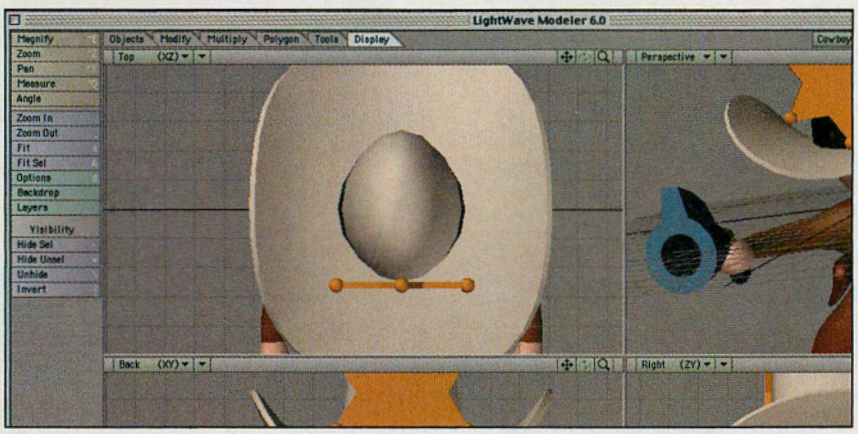
The program still has two main modules, which really constitute separate programs. In Modeler, you create objects using a variety of modeling tools. In Layout, you texture, position, animate, and deform your models. This aggressively bipolar system has always caused headaches for Lightwave users, but a new linking program, called the Hub, ties the two together much more closely, eliminating the necessity of manually updating objects in one mode after changing them in the other. Among other welcome interface improvements, Lightwave at long last features nonmodal windows and palettes you can actually move around onscreen. Unfortunately, Layout offers just one layer of undo—but then, Layout used to have no undo feature at all.

Lightwave 6's Modeler remains the most capable polygonal modeler on the Mac, suitable for everything from low-poly game models to superdetailed objects for feature-film work. The organic MetaNURBs modeler, redubbed SubPatches, now provides real-time subdivision surface modeling—currently the favored method for obtaining truly smooth, detailed surfaces—with point weighting (called vertex maps). Lightwave now offers metaballs and spline patch modelers as well. With the new MultiMesh feature, you can create multiple layers of models within one large model, and preserve the ability to manipulate them separately within Modeler and Layout—a particular boon for animators creating complex character models.

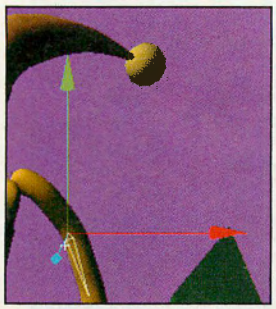
In Layout, you tweak motion through the Motion Graph, which displays keyframe data graphically and gives you complete control over the object's location at all times. Version 6 has completely redesigned the graph/curve editor so it allows multiselection and editing of heterogeneous curve types.

Using the new Motion Designer, you can now accomplish procedural hard and soft dynamics, formerly possible only with a third-party plug-in. The Motion Designer provides believable motion when applying forces like wind and gravity to hard-bodied objects, but creates less credible cloth and liquid motions, with odd motions and jittering we found hard to eliminate. All commercially available soft dynamics systems tend to have similar problems, however, so this comes as no surprise. With Lightwave 6's particle animation engine, Particle Storm 2se, you can create complex animations for explosions, fire, sparks, and flocking or swarming creatures. This engine is the best currently available on the Mac, though it does not match the particle system Maya Complete will include.

The tools for character animation have received the most significant upgrade in the program. The improvements start with Skelegons, a new boning approach for quickly sketching out a skeleton in Modeler using special polygons. This method delivers important advantages, such as the ability to save skeletons for use in different



Lightwave's modeler looks the same, yet different. It groups controls more logically using tabs and contextual menus, and the interface has an eye-pleasing platinum appearance.



The new Skelegon implementation makes character animation far less technical (an arm bone appears with x, y, and z arrows projecting from it).

models or to modify skeleton and model proportions simultaneously. Instead of a clunky area-of-influence system for bones deformation, in the new system you attach points directly to bones with the most elegant point-weighting system we've ever used. In fact, deformations of all kinds are among Lightwave 6's strong points.

An improved morph-targeting system called EndoMorphs makes creating a character's facial controls a much more enjoyable procedure. Unlike morph targets, EndoMorph data and poses now get stored directly in the object file. This makes it possible to modify the model after creating the targets.

Possibly the most important new feature introduced in Lightwave 6's animation system is the PAVLOV (Parameterized Animated Values Linking Objects and Variables) Channel repository, which allows all animated items in a scene to reference, drive, or link to one another. The equivalent of the expressions tools used in the Maya and Softimage animation apps, PAVLOV offers a huge advantage when you want to, say, control a bulging-bicep Endomorph with the rotation of the arm, or create a single control to close a character's hand into a fist. PAVLOV even enables channel values to modify surfaces. Lightwave 5.6 notably lacked this functionality, aside from some clumsy plug-ins, and its inclusion this time around finally makes the program a true character animation tool.

None of this would be much use without the complete revision of Lightwave 5's inverse kinematics (IK) engine, an awkward tool widely reviled by serious animators. (One large animation studio decided the IK needed a divine savior and wrote a Lightwave plug-in, called Project Messiah, that just replaced the darn thing.) Luckily, Lightwave's new IK system bears little resemblance to its predecessor—it looks and acts much more like the fast and stable IK systems in comprehensive character animation tools such as Maya and Hash's Animation:Master.

The texturing engine can handle an infinite number of layered image maps and procedural textures, and you can apply them to different channels, such as bump, diffusion, transparency, and so on. Managing texture layers is easier via the new drag-and-drop interface and the filters, which you can apply to reveal only the types of textures you want to see. In the past, Lightwave handled texture positioning numerically, but now you can position textures interactively. New texture attributes, including glossiness and refraction mapping, maintain Lightwave's preeminence in realistic representation.

Watch out, Mojo Jojo! Lightwave is the tool of choice for many TV series, including this 3D conceptualization of the amazing *Powerpuff Girls*.

Possibly the most radical new technology introduced in Lightwave 6 is VIPER (Versatile Interactive Preview Render)—basically a way to generate quick previews of the scene without rendering from scratch again. VIPER saves image data in separate channels and only renders your changes when it generates a new preview; changes automatically update the preview render of the scene. You'll end up with the best final renders you've ever made, because Lightwave's renderer is the best you can buy.

After we'd used Lightwave 5 daily for more than a year, the earlier versions' quirks and limitations, especially for character animation, frustrated us. Lightwave 6 addresses nearly all our concerns. It is a remarkably powerful program, with innovative, production-streamlining features not available in any other Mac 3D software.

—Raf Anzovin and Steve Anzovin

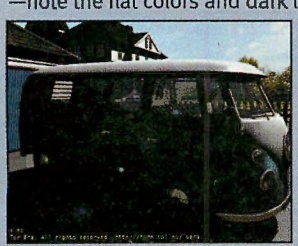
good news: Improved interface. Superior IK and bones systems. Definitive polygonal modeler. Superb renderer. **bad news:** Some unfixed clunkiness. Very un-Mac-like. Few available Mac-compatible plug-ins.

www.seemebuyme.com/ma1112

Is It Live or Is It Radiosity?

If you crave 3D ultrarealism, Lightwave's improved radiosity renderer provides the last word in meticulously true-to-life images. Radiosity is a time-intensive rendering technique that closely reproduces the diffuse reflection of light—it is the only approach that shows light bouncing interactively between surfaces as in the real world. The result is imagery that looks photographic, but in many cases takes hours to render.

1. Lightwave artist Tor Ora rendered the VW bus and environment without radiosity—note the flat colors and dark lighting.

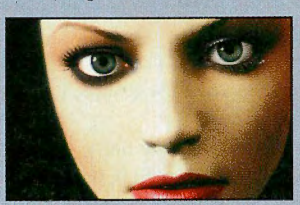


This dark, sinister VW bus lacks the bounced light illuminating it from the ground.

2. Ora has turned on radiosity—and everything glows! Light bouncing up from the ground fully illuminates the bus.

Radiosity lights up the bus realistically.

3. Here's a more subtle effect—radiosity adds softness to the skin and around the eyes. Regular rendering techniques would lose much of the soft detail where the brow ridge shades the tear ducts.



Skin's so soft with radiosity.

Baldur's Gate

fun & games

Company: Graphic Simulations
Contact: 972-386-7575, www.graphsim.com
Price: $49.95 (SRP)
Requirements: 200MHz PowerPC or faster, 64MB of RAM, 380MB of free hard disk space, thousands of colors, 4X CD-ROM
Recommended: 350MHz PowerPC, 128MB of RAM, 600MB of free hard disk space, millions of colors, 8X CD-ROM

This should be déjà vu for the AD&D fan. The Gnoll has just successfully avoided the effects of the Cleric's command spell. A magic missile (from a wand) is incoming from the fighter, while the thief is about to loose an arrow.

Baldur's Gate is a sad example of a PC port gone awry. A variety of bugs that range from annoying to system-stopping mar what should have been an outstanding game. The underlying game is very, very strong indeed—enough so role-playing game fans could reasonably enjoy this game until the forthcoming patches arrive. However, we'd just as soon wait.

The game itself is a real-time adaptation of classic party-based role-playing games, where a group of one to six characters (called the party) roams a fantasy world. Think along the lines of Sierra's Ultima series and Fantasoft's Exile. Advanced Dungeons and Dragons (AD&D) fans will appreciate that Baldur's Gate adheres closely to TSR's Advanced Dungeons & Dragons second edition rules. Those not experienced with (some would say afflicted with) AD&D will pick up the rules as they go along. The game is set in the Forgotten Realms' Sword Coast—a magical realm populated by monsters, dungeons, townsfolk (helpful and otherwise), and NPCs (nonplayer characters) who may help, hinder, or even join the party. Along the way, the characters find weapons, armor, gems, and other items they can use or sell for gold.

Baldur's Gate has a fascinatingly deep plot, with many subquests available alongside the main story line, in which you avenge your foster father's death. Graphic Simulations claims the game has over 100 hours of plot, and we're not inclined to argue. In general, the second-edition AD&D rules give your party a rich set of options whenever combat breaks out. Plus, thieves can hide in shadows, casting spells requires both time and speaking ability, and you have access to a wide variety of spells.

Unfortunately, the close attention to AD&D rules also causes some problems. Low-level characters are almost humorously prone to sudden death in AD&D, which makes low-level play challenging, to say the least. Your party must choose its fights carefully, and save very, very frequently so that it can backtrack to safer scenarios.

Much more disastrously, a halfhearted porting job has left many bugs that leave us no choice but to demote Baldur's Gate from *Spiffy* to *Yeah, Whatever.* One minor irritation is that the game shoves all your desktop icons into the upper left, 640 by 480 portion of the screen. More seriously, obvious graphical glitches remain in many screens, and we suffered several complete system lockups. The game might as well be wearing a "Patch Me" sign. Worst of all, the multiplayer game options from the PC version are simply missing—all you get is a sticker on the box, offering a free upgrade to Baldur's Gate Multiplayer Internet Edition when it becomes available.

Unless you're a diehard role-playing gamer—or unless your system simply can't handle any of the other recent games (Baldur's Gate ran well on a beige 300MHz G3)—you should wait for a more stable version of this game. We'll keep our eyes peeled for patches. This'll be a great game when it's finished.—*Ian Sammis*

Ah, Ah, Ah, Ah—Stayin' Alive, Stayin' Alive!

At the first level, your character starts off weaker than the vast majority of the game's monsters. Here are a few survival tips.

RUN AWAY About all your party has going for it is speed—take advantage of that! If you're fighting a losing battle, you're almost always better off somewhere else.

MISSILE WEAPONS Low-level spell casters can hurl three spells at most before they have to recuperate. Equip your clerics and magic users with slings so they remain useful after throwing their spells.

COMMAND The Command spell (first-level clerical) renders a single opponent unconscious for a single round of combat. While almost useless against groups, it can stun a midlevel assassin long enough for your party to pound him.

PAUSE BEFORE COMBAT You can pause just as a fight starts, give all your party members instructions, then resume the game. Baldur's Gate is not Diablo II; if you play as though it were, you'll just get your party killed.

good news: Deep game, with many subplots. Fairly faithful rendition of Advanced Dungeons and Dragons second edition rules. Modest hardware requirements.
bad news: Fairly faithful rendition of AD&D second edition rules. Buggy. No multiplayer mode.

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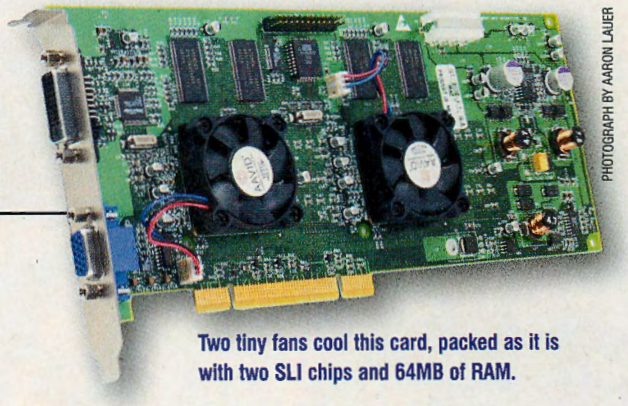


PHOTOGRAPH BY AARON LAUER

Two tiny fans cool this card, packed as it is with two SLI chips and 64MB of RAM.

hardware

Company: 3dfx Interactive
Contact: 800-234-4334 or 408-935-4400, www.3dfx.com
Price: $329 (SRP)
Requirements: G3 or G4 processor with spare PCI slot, Mac OS 8.1 or later, CD-ROM

With 64MB of RAM and a dual VSA-100 chip set running 2D and 3D functions, the Voodoo 5 5500 PCI graphics card surpasses the ATI Rage 128 as the leading Mac 3D card.

Installation is basic. The hardest part is attaching one of the spare power cords inside your G3 or G4 to the card. Other than that, you just pop the card into a spare PCI slot, turn on your Mac, and install the easy-to-use drivers. The card also includes a DVI connector for digital monitors.

Once you've installed the Voodoo, you suddenly have a state-of-the-art 2D and 3D graphics system. Although the Voodoo 5 will zip through Photoshop filters faster than your Mac's standard ATI Rage 128, the difference is negligible. Where it really flies is in intensive 3D gaming apps, such as Quake III, Deus Ex, and Unreal Tournament.

When we were playing Quake III—with full-scene antialiasing turned on at 1,024 by 768 screen resolution on a 400MHz G4—the Voodoo card produced buttery-smooth frame rates of 40 or more fps. The ATI 128 card is nice for games, but hard-core players *will* appreciate the difference.

Although Voodoo 5 doesn't support DVD video playback, it's perfectly feasible (and practical) to leave your ATI card inside your Mac—your ATI card does support video, so you can plug your monitor into it when you want to watch DVDs.

As it stands, the Voodoo 5 card includes feature sets that game designers don't even currently support. If you have $329 kicking around, this card will guarantee the best graphics available on the Mac.
—Frank O'Connor

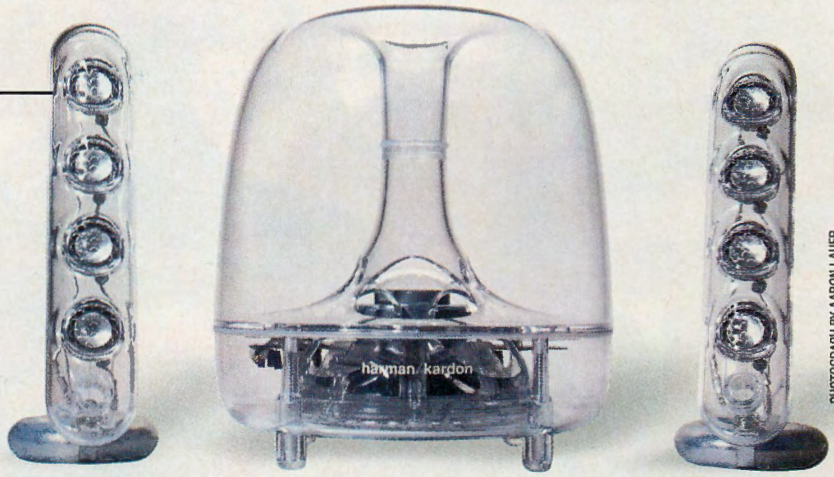
good news: Stunning performance. Easy installation.
bad news: No DVD playback. Relatively expensive.

www.seemebuyme.com/ma1118

SoundSticks

hardware

Company: Harman Multimedia
Contact: 818-893-8411, www.harman-multimedia.com
Price: $199 (SRP) at the Apple Store (www.apple.com)
Requirements: USB-equipped Mac, Mac OS 9.0.4 or later



PHOTOGRAPH BY AARON LAUER

You just can't get prettier speakers than the SoundSticks—though for the price you can get louder ones.

When Harman-Kardon designed the original iSub, it intended the subwoofer to work with that season's iMacs, both aesthetically and technically. Enter the next generation: The iSub device is the same; what's new are the SoundSticks, two banks containing four Odyssey speakers each.

The SoundSticks are a perfect match for the iSub. The complete subwoofer-and-speaker package will now play well with any USB-equipped Mac, not just with iMacs. Fire up a CD or MP3 track and your ears won't complain either—the speakers' response is rated beyond 20KHz, and they compliment the bass with crisp, clean audio at the high-end frequencies. The main complaint is a slight lack of power. If you're looking to rattle the cupboards, no 20-watt woofer will do. The sleek design also sacrifices some standard onboard conveniences such as a master volume control and headphone jack.

When we first set up the system as recommended, we found the bass disappointing. We soon discovered the problem: Most of the bass sound comes out of the iSub's bottom and all but disappears into the floor below. A sheet of Plexiglas or similar material placed underneath the iSub solves that problem—as does putting the iSub on your desk's hard surface.

If you're willing to sacrifice some function for a knockout form—and pay for it—the SoundSticks rock.—*Niko Coucouvanis*

good news: So sexy they ought to be illegal. Great sound for a 40-watt system.
bad news: No master volume control. No headphone jack. More form than function.

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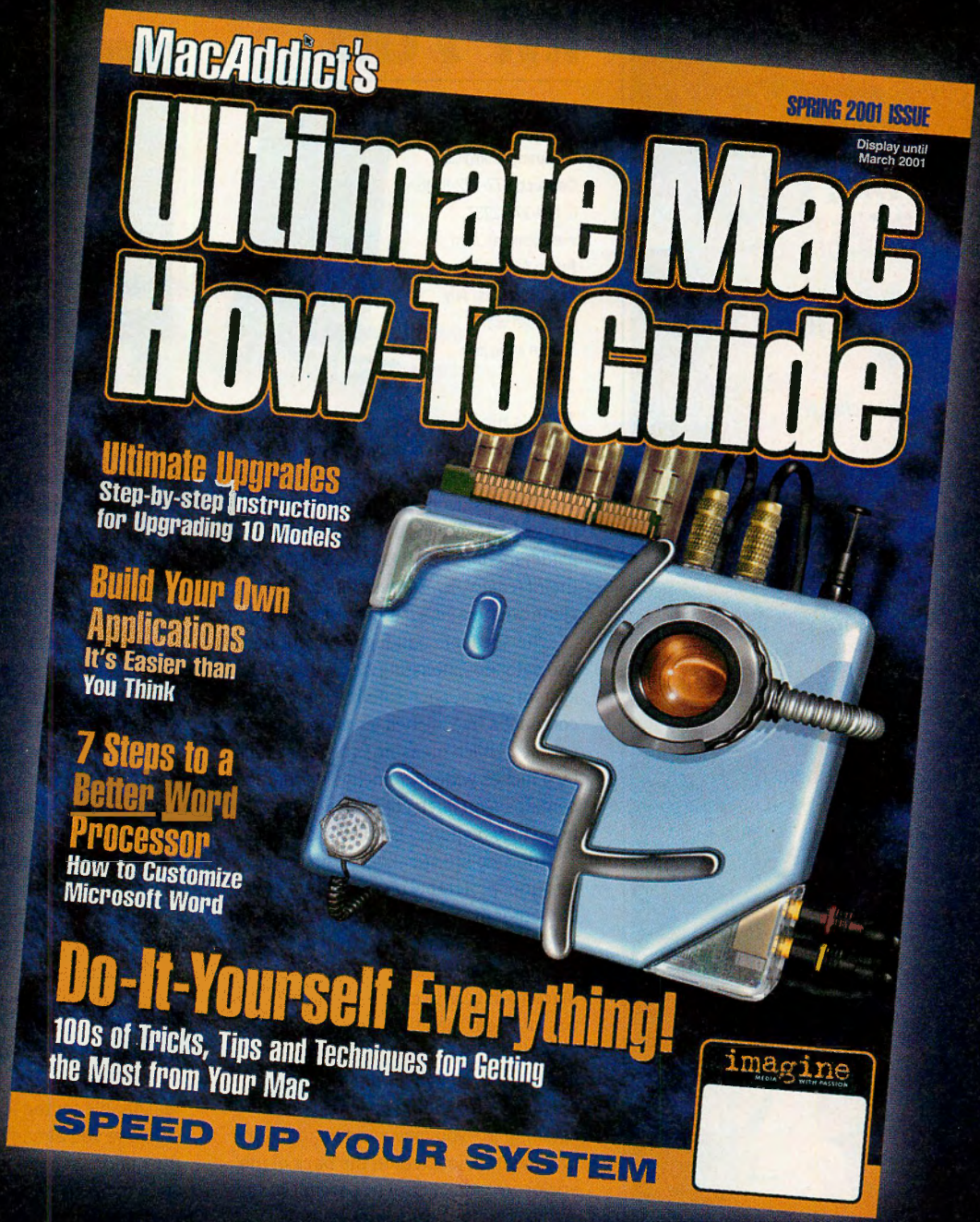

The creators of *MacAddict* magazine celebrate the extreme functionality of the Macintosh in *MacAddict's Ultimate Mac How-To Guide*!

Stuffed full of hundreds of tips, tricks, and tutorials, this bonus issue features articles on everything from upgrading your RAM to building a video game.

With the *Guide*, Mac novices and tech-savvy veterans alike will learn how to take their Mac use to the next level.

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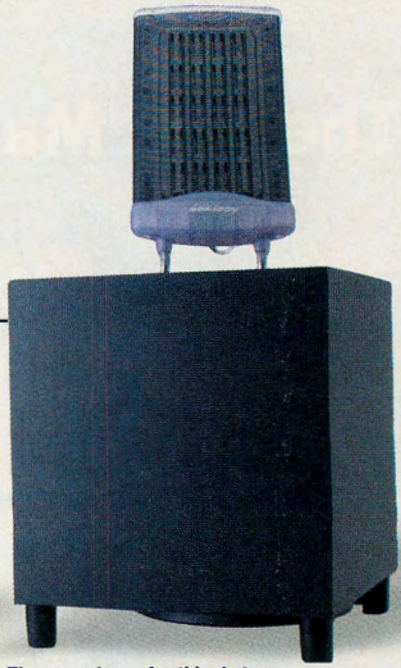
Monsoon iM-700

hardware



PHOTOGRAPH BY AARON LAUER

They may be wafer-thin, but their sound is far from flat.

Company: Sonigistix
Contact: 877-722-8346 or 604-271-2237, www.sonigistix.com
Price: $169 (SRP)
Requirements: Any Macintosh with a 1/8-inch audio jack

It's nice to see Sonigistix jump on the Mac fashion bandwagon with its Monsoon iM-700 flat-panel speakers, the icy translucent version of the highly praised MM-700 model. But aesthetics aside, the iM-700s deserve every bit of their *Freakin' Awesome* rating for their clean sound and accurate stereo imaging.

The speakers build in a subwoofer and two satellites, boasting 44 watts of total system power. Each satellite measures a compact 4 by 8 inches, and the subwoofer cabinet, which measures 10 inches high by 9 inches wide by 9 inches deep, contains a 5 1/4-inch cone. The overall frequency response is 50Hz to 20KHz.

The satellite speakers sit on your desktop, preferably on either side of the computer monitor, pointing at your head. This puts you in the "sweet spot," meaning that the left and right audio placement is as accurate as possible, so you can hear the audio as its designers intended. The subwoofer can sit on the floor; however, you'll want it close by because—depending on what you're listening to—you may need to adjust the bass control, located on the back of the enclosure. You control the overall volume with a remote-control puck—a tiny handheld device with a mute button. The puck adds some desktop clutter—you're best off setting the volume to about 3/4 clockwise, hiding it behind the desk, and using your Mac OS sound control.

So how does this thing sound? For gamers, the subwoofer gives nice low-end oomph. Plus, Sonigistix's Planar Focus technology, which eliminates the reflections of sound waves from the desktop and sides of monitors, provides accurate stereo imaging and a clean 3D sound. Unfortunately, none of the games that incorporate 3D sound have come out in Mac versions yet. On the music side, we put it to the audio mega-test with samples ranging from Ella Fitzgerald to Rob Zombie, Schumann to Kiss. The iM-700s' audible midrange peak make vocals and horns stand out nicely and give an extra edge to rock guitars. The speakers can get pretty loud, and they experience distortion only at the kind of volumes that cause hearing loss. For average gamers and music enthusiasts, this system delivers.

If you're looking for a high-quality multimedia speaker, you can't go wrong with the Monsoon iM-700s. With their translucent design, these speakers look and sound good. The $169 price is reasonable for the technology, and software you already possess can solve the minor annoyances, such as the volume puck and lack of onboard EQ.
—Andrew Tokuda

good news: Beautiful, space-saving design. High-quality sound. Impressive Planar Focus technology. Decent price.
bad news: No equalizer. Inconvenient puck control for volume.

freakin' awesome!

www.seemebuyme.com/ma1114

Palm m100

hardware

Company: Palm
Contact: 800-881-7256 or 408-326-9000, www.palm.com
Price: $149 (SRP)
Requirements: PowerPC or faster, Mac OS 7.5.3 or later, 6MB of RAM, 25MB of free hard disk space, CD-ROM

PHOTOGRAPHY BY AARON LAUER

The Palm m100 is cute, curvy, and durable, but it's still a PC-serial device out of the box.

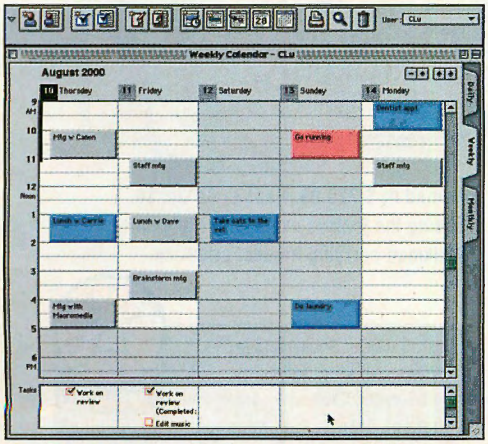
When it comes down to it, the Palm m100 is really a Palm III with the customizability of a Nokia cell phone and the rugged durability of an underwater watch. Palm's latest handheld is the entry-level, $149 m100, which sports a flip lid and new ergonomic shape. It's an appealing handheld for PDA virgins, except for one problem: It still employs the seriously annoying PC-only serial technology for transferring information to the computer.

The actual device is, to borrow a term, spiffy. The m100 is smaller than most other handhelds and, with its new, curvier shape, fits comfortably in the palm of your hand. However, that reduces the size of the screen, which may bother those who dislike squinting at a tiny display. Individualists will celebrate the fact that you can purchase snap-on color faceplates à la Nokia for $20. The m100's flip-top lid has a window through which you can spot-check the time. Perhaps the coolest addition is the notepad, which allows you to take notes in your own handwriting (as opposed to the symbolic Palm writing known as Graffiti).

Press the black button to check the time and date through the m100's flip-top lid.

The main problem, though, is that the product is not Mac-compatible out of the box. To its credit, Palm does offer a free serial adapter kit via its Web site—this lets you plug your hot-sync cable into a serial port. But those who have progressed to the land of USB will have to pay $40 for a USB adapter kit, which negates the m100's attractive price tag. On a positive note, though, Palm has improved upon the Mac USB drivers so that hot-syncing via USB is no longer problematic.

The m100 runs on two AAA batteries and ships with 2MB of RAM and version 2.6.1 of the Palm OS desktop software. A comparable handheld is the Handspring Visor, which sells for $179 and comes with a USB cradle. The fact that most of us will have to buy a USB kit makes the price difference between the m100 and the Visor negligible, thus making Palm's attempt to deliver attractive pricing on handhelds is pretty meaningless for Mac users.—*Cathy Lu*



The Palm desktop application works fine with the m100 and hot-syncing is stable, too.

good news: Cool new design. Durable. Comfortable in the hand. Lets you take notes in your own handwriting.
bad news: Not immediately Mac-compatible. Blue-and-white G3, G4, and iMac users must buy USB adapter for $40.

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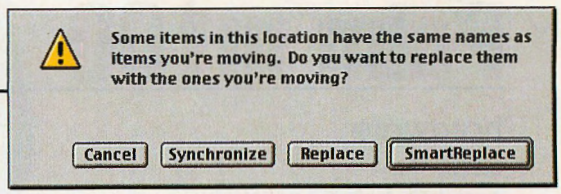
Requirements: PowerPC, Mac OS 8.5 or later, 16MB of RAM, 2MB of free hard disk space, CD-ROM



Try to replace a folder with one by the same name, and CopyAgent offers you a choice of three copy methods.

You're all backing up your important files on a regular basis, right? This handy utility streamlines file backup with three very useful enhancements for merging and synchronizing folders.

Backing up often requires replacing a target folder on your backup media with an identically named source folder. CopyAgent offers three new choices: SmartReplace replaces the target faster than Finder because it doesn't copy identical files. SmartMerge makes sure the target folder contains all files from both the source and the target. And if you maintain a pair of matching folders, SmartSynchronize copies files both ways. Use them with CopyScheduler for unattended backups.

CopyAgent also includes a few features unrelated to copying. TurboKeys lets you trigger every menu item in every application with command-key equivalents. Eraser Agent securely deletes files, autodeletes locked files, and lets you selectively delete files before emptying the Trash. We remain skeptical of FastFile Erase, however. Even with hundreds of files involved, we saw no speed improvement over normal Trash emptying. And though Fast File Erase lets you empty the Trash in the background, all recent versions of the Mac OS already have that feature. Also, Network Copy didn't noticeably speed up our network copying.

Despite a couple of overhyped features, CopyAgent's file-copying enhancements are so useful that the Mac OS should include them to encourage good backup habits.
—Joseph O. Holmes

good news: Incredibly useful file-copy enhancements.
bad news: Fast File Erase and Network Copy features are not useful.

www.seemebuyme.com/ma1121

Nomad II

hardware

Company: Creative Labs
Contact: 408-428-6600, www.creativelabs.com
Price: $329.99 (SRP)
Requirements: G3 or faster, Mac OS 8.6 or later, 32MB of RAM (64MB recommended), 12MB of free hard disk space, USB port, USB Manager version 1.2 or higher, Internet connection

PHOTOGRAPH BY AARON LAUER

Nomad II: $ 329.99. Napster MP3s: $0. Seeing the jealous expressions of your Walkman-carrying friends: priceless.

For sound quality and hardware design, Creative Labs' Nomad II portable MP3 player is one of the best we've seen. For Mac friendliness and affordability, its shine fades fast. Still, we forgive its shortcomings, since the Nomad II played our MP3s flawlessly.

The player is a slick, 3.1-ounce silver device that fits comfortably in your hand. The packaged headphones with remote are surprisingly usable, and the included 64MB flash memory card for music storage slides easily into the battery compartment. Press the Play button firmly to bring up a crisp, easy-to-read display.

Playing MP3s on the Nomad II is a joy. It rendered our range of diva, electronic, metal guitar, and classical music loud and clear. You can adjust the treble and bass manually or with six preset modes on the DSP equalizer.

The Nomad II also comes with voice recording and FM radio with 32 presets. Setting the presets on the Nomad itself is frustrating. Entering station numbers via the software interface is much easier, but that brings us to our gripe. While PC users download tracks through the very pretty Nomad Manager software, Mac users download through a bare-bones SoundJam MP interface. Downloading via SoundJam MP is drag-and-drop easy, but we wish we could reorder tracks via the interface.

The Nomad II is a great portable MP3 player with few hardware flaws. If you're rich, style-conscious, and indifferent to inferior Mac software, the Nomad II is for you.—*Narasu Rebbapragada*

good news: Slick-looking. Great-sounding. FM radio.
bad news: Expensive. Slow buttons. Inferior Mac interface.

www.seemebuyme.com/ma1115

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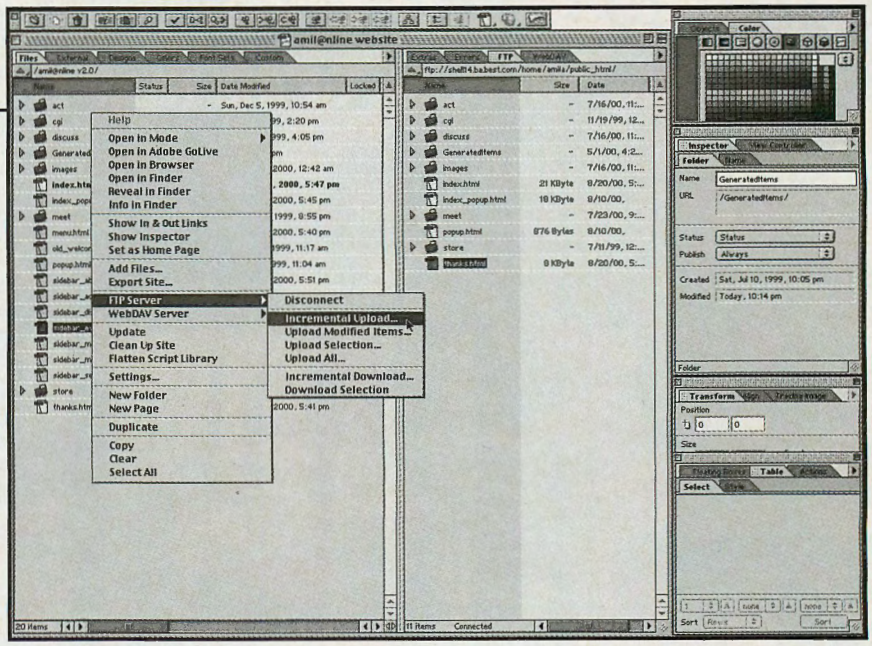
GoLive 5.0

design & graphics

Company: Adobe Systems
Contact: 800-833-6687 or 408-536-6000, www.adobe.com
Price: $299 (SRP), $99 (upgrade)
Requirements: PowerPC, Mac OS 8.6 or later, 48MB of RAM, 70MB of free hard disk space, CD-ROM



You're a big boy now: GoLive 5.0 becomes a mature program, adding practical new features without messing with what worked in version 4.0.

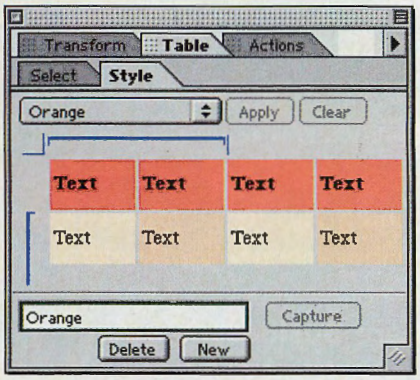
By adding usable new features without sacrificing its trademark ease of use, Adobe's new GoLive 5.0 aims to do for Web design what Photoshop did for image editing. It's been a long time in the making, but the result is a truly droolworthy program—a beauty to behold, with some serious power under the hood.

Our first experience was one of déjà vu. As expected, GoLive has adopted Adobe's tried-and-true look, which puts Dreamweaver's clunky, inconsistent interface to shame. Many functions have moved to multitabbed palettes, further crowding your screen real estate (GoLive makes you long for a second monitor to keep track of all the elements in your project). However, as in other Adobe programs, you can keep clutter to a minimum by rearranging tabs within and between palettes, keeping needed functions on hand and removing the rest.

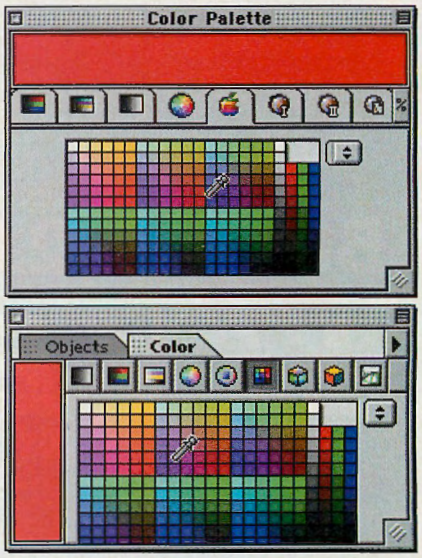
Despite the interface revamp, Adobe didn't mess with the unique aspects of GoLive's interface that so many designers love. The intuitive, tabbed Site and Document windows allow you to go back and forth between different site- and page-specific functions. The Mac-only palette-docking feature—with a Control-click, you can minimize palettes into tabs that hug the side of the screen—gives you more room to work. The innovative point-and-shoot tool, which connects objects and actions with one smooth move of the mouse, is a sheer joy to use.

Adobe has added a host of welcome new features, including dramatically improved contextual menu support, user-definable keyboard commands, cross-platform site file and extension compatibility, and customizable menus. We used the new Transform and Align palettes to manipulate, group, and resize objects on the Layout Grid in a manner similar to Illustrator's. A new History palette, which works exactly like its Photoshop counterpart, allows up to 20 levels of undo. Best of all, Adobe has removed GoLive 4's annoying requirement that you press Return after entering data in palettes. GoLive also manages memory more effectively. Opening up too many pages (in our case, 20 complex, graphics-heavy pages) no longer predictably crashes the program.

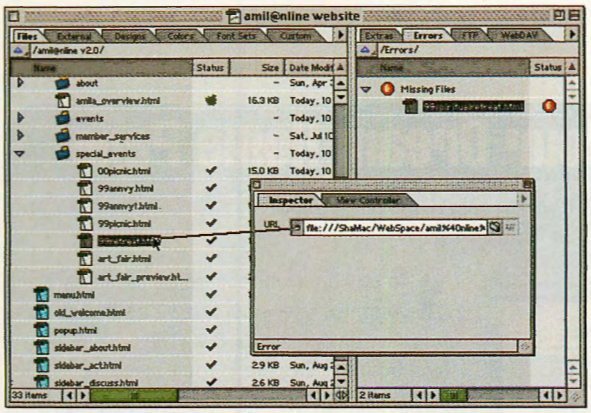
Adobe has taken one of GoLive's strengths, table creation and manipulation, and made it even better. The new Tables palette feels a lot like working with cells in Excel. The feature allows you to design and apply text, style, and color formatting with a click of the palette's Apply button; sort data by row or column; and select multiple cells, which makes working with nested tables a breeze. The presentation of your table work in Layout Mode closely resembles the final product—not the case in Dreamweaver.



A cure for repetitive stress injuries? Instead of selecting each cell in a table and formatting it by hand, use this palette to save text, table, and color styles and apply them with one click.



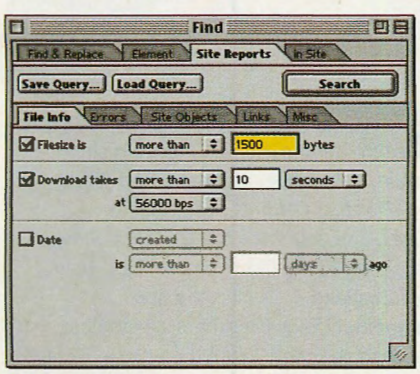
Look closely: Version 5.0 (bottom) has subtle interface tweaks—everything is more compact, making it a little more challenging to select options.



Just point and shoot: Instead of typing in a file name and location, use the point-and-shoot tool to select the item you want, and GoLive will fill them in automatically.

GoLive gets along better with its Adobe siblings, saving a tremendous amount of time you'd otherwise spend importing and exporting between programs. It incorporates native Photoshop, Illustrator, and LiveMotion files as Smart Objects, allowing you to optimize and manipulate them within GoLive. The Smart Links feature makes these objects automatically reflect changes in the original files—no more reoptimizing and reimporting graphics. Also, by incorporating Photoshop's Save For Web engine, GoLive allows you to make image compression decisions at site-publishing time—not site-building time—and you can change your mind as often as you want.

GoLive finally plays nice with formats like Flash (SWF), RealPlayer G2, Cascading Style Sheets (CSS2), and WebObjects 5.0. Adobe has also improved the already wonderful QuickTime editor—it now delivers near-iMovie functionality, letting you drag and drop video, Flash, text, and audio tracks onto a timeline to create a unified QuickTime presentation.



GoLive, go get it: The expanded Find feature lets you search for HTML blocks, find and replace text or objects, and compile Site Reports that track errors, file sizes, and broken links.

For handling code, GoLive 5.0 is hands-down better than its predecessor. While the program primarily targets people who design sites for a living, its new Source palette is an ideal learning tool for beginning HTML programmers. The palette shows the on-the-fly changes to code that occur when you move objects around, so you get a good understanding of how HTML produces a page. This palette also allows you to hand-edit the underlying HTML quickly.

Previous versions of GoLive have frustrated workgroups. The program's former insistence on automatically rewriting HTML according to its strict guidelines annoyed many users, who needed flexibility to deal with custom source code introduced by new Web technologies and back-end databases. Version 5.0's new 360Code does not interfere with carefully hand-crafted code or custom tags (such as ColdFusion or XML) that are foreign to GoLive, so you can move back and forth seamlessly between GoLive and other Web programming tools using the same code. This feature works as advertised, although it will take a while to regain the trust of designers burned by older GoLive versions.

Now you see it, now you don't: Control-click your palette menu bars to get these neat vertical tabs, giving you more room for your work.

Other functions for working with code include dynamic links to ODBC databases; HTML snippets you can create, save, and drag and drop into any site; improved HTML and JavaScript editors that allow many formatting and presentation options; and cleaner code generation, especially for those using the table-based Layout Grid. You can search for and replace HTML elements, which enables batch changes of any tag-based element. You also have a full Javascript debugger for your programming pleasure.

In another nod to design houses and large workgroups, Adobe has included support for WebDAV (Web-based Distributed Authoring and Versioning), a program-agnostic protocol standard for group collaboration. WebDAV serves a version-control function by allowing multiple designers to check out and work on pages securely, locking them so colleagues can't edit them simultaneously. The process is a little trickier to set up than Dreamweaver's proprietary method, but it works just as well and allows other programs to access files.

Celebrity Web Match: GoLive Versus Dreamweaver

It's a close call—let's take a good look at the scores.

Look and Feel, Ease of Use

Advantage: GoLive

No contest here. GoLive had the edge before, and with the Adobe makeover it's even better. Small but readable icons, neatly stacking palettes, and a compact toolbar maximizes work space and minimizes time spent hunting for tools.

Extensibility

Advantage: Dreamweaver

GoLive has laid the foundation for cross-platform extensions that let you add menus, palettes, and other customized features, but Dreamweaver has had enough of a head start in this area to amass a library of hundreds of useful extensions.

Site Management and Group Collaboration

Advantage: GoLive

GoLive matches Dreamweaver's collaborative working features through its WebDAV compliance, and ups the ante with the Site Report Controller for obsessive Webmasters who need to know exactly how many seconds a page takes to load.

Working with Code

Advantage: Dreamweaver

We have to admit it—GoLive's source code tools look and work great, but nothing matches the power of the BBEdit text-editing program bundled with every copy of Dreamweaver.

GoLive's new site-planning features replace the Web designer's traditional sketchpad. You can drag objects around a virtual whiteboard and play with different architectural concepts. This tool seems like a toy at first, but when the number of pages gets very large, its value is easy to see. Once you're satisfied with the results, GoLive creates the site file and pages, ready for you to add text, images, and other page elements.

From this point, you can import a Photoshop file (say, a mockup of your page layout, colors, and graphics) as a tracing layer that lies semitransparently in the background. More than just a guide, the tracing layer allows you to select portions of the underlying graphic and turn them into elements on the page itself. After launching the site, use the Site Report Controller to generate reports that help you fine-tune and monitor it. This extension of GoLive's excellent search capabilities lets you find files by error, links to and from a particular page, bad titles, last revision, and more.

In redesigning GoLive, Adobe carefully kept or improved the features that made GoLive 4.0 great, while leveraging the Adobe interface and graphics strengths to produce a must-have upgrade. The company has taken a hard look at how Web designers create sites, as well as the everyday problems they face in bringing complex sites online, and has addressed those needs with no-nonsense tools. The best thing about GoLive is that everything makes sense—from the drag-and-drop ease of adding page elements to creating rollover GIFs and adding JavaScript actions from GoLive's database.

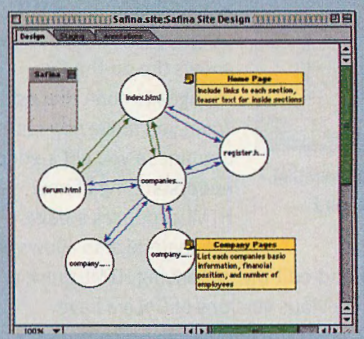
Compared to previous versions, GoLive 5.0 is more stable, produces cleaner and more cooperative code, and implements usable collaborative and site-planning tools that shorten the path from concept to live site. Though it has arrived a little late on the shelf, Adobe GoLive has finally matured into a world-class application. It's been well worth the wait.—*Shahed Amanullah*

good news: Friendly Adobe interface. Better integration with other Adobe programs. Better code handling. Great site design and management tools.
bad news: Collaboration features (WebDAV) difficult to set up. Database-linking features require Windows NT box. Too many palettes.

www.seemebuyme.com/ma1106

Building Your Dream Home Page

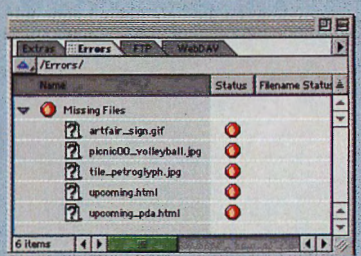
GoLive 5.0 has many features to help HTML newbies create and publish Web sites.



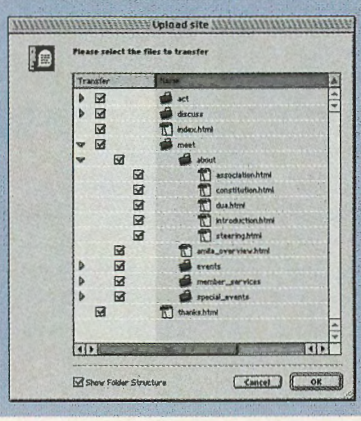
1 To pull up a whiteboard for planning your new site, select New Site Design from the Design menu. Drag the document icon from the Site tab in the Objects palette (hint: it's the sixth tab from the left) into this white space to symbolize new pages. To link pages together, use the point-and-shoot tool (it's the button with the swirl in it, located among the whiteboard's page icons). Write your design ideas on Annotated stickies.

2 Build your site by dragging and dropping elements from the Objects palette. Start with a Layout Grid (top left icon), which provides a desktop-publishing–style environment for snapping text boxes and images to a grid. Once you drag a table icon onto the page (top, fourth from left), use the Inspector and Table palettes to determine cell configurations, colors, and formatting.

3 When adding objects to the page, keep an eye on the Source Code palette to follow the way GoLive adds tags and formatting—this gives you a great opportunity to learn more about how HTML works. You can change text and tags in the Source Code palette and see the graphical changes in the Layout window.



4 Test your site for errors by clicking the Errors tab of your site file. If the window is empty, then you have no errors. Icons here represent links to pages or images the program can't find.



5 To upload your site, choose Settings from the Site menu. Enter your site domain, user name, and password. Click the FTP Server Connect button in the toolbar, and you'll see the contents of the Web server in the frame on the right. Now all you have to do is click the FTP Incremental Upload button in the toolbar to upload your site. You'll then see a list of updated files to upload with check boxes next to them. If the files shown are the ones you want to upload, click OK.

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5SYG8

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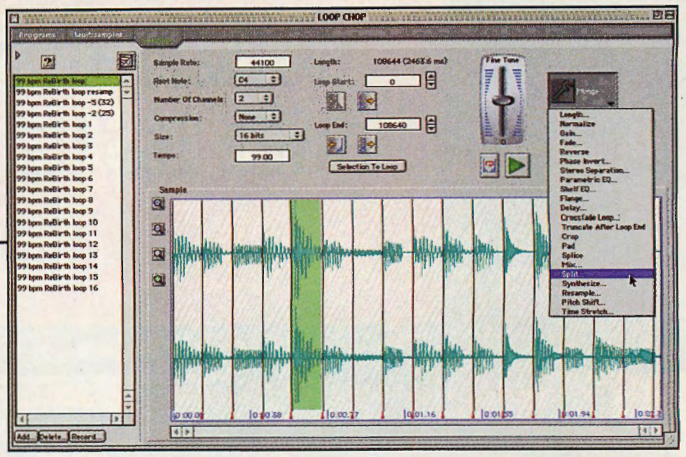
Unity DS-1 2.0.1

audio

Company: BitHeadz
Contact: 831-465-9898, www.bitheadz.com
Price: $449 (SRP), $149 (upgrade)
Requirements: Power Macintosh (200MHz recommended), Mac OS 8.1 or later, 64MB of RAM, 320MB of free hard disk space, 800 by 600 or higher screen resolution, CD-ROM



BitHeadz fortifies DS-1's formerly undernourished waveform editor in version 2.0.1. It can now slice rhythmic samples into beats.

FIND A DEMO of Unity DS-1 2.0.1 on The Disc.

After scoring a *Freakin' Awesome* in our January 1999 issue (p58), Unity DS-1, the deepest software sampler on the Mac, has returned to push the limits of virtual musical instruments even further. While it doesn't offer any groundbreaking new features, this 2.0.1 version comes with so many useful refinements that it will enable many musicians to kick the hardware habit completely.

For those unfamiliar with the first version, Unity DS-1 is a suite of programs that turns your Mac into a real-time performance instrument. Hook up a MIDI controller and you can play digitally recorded sounds (samples) from RAM, shaping them on the fly with filters, synthesizer envelopes, and such effects as chorus and reverb. You can render output into a stereo AIFF file or feed it directly into many recording and sequencing programs, creating a complete virtual studio. (Sequencers can also play DS-1 directly.)

Via third-party audio interfaces, DS-1 supports audio resolutions up to 24 bits or 96KHz—greater than any stand-alone hardware samplers—but it can also use the Mac's built-in audio circuitry, so you can run it on a PowerBook. Its other giant advantage over hardware (besides a far lower cost) is that it loads new sounds into memory within seconds, not minutes.

Version 1 had some annoying limitations, however. The program supplied mediocre sounds, skimpy online help, and a seriously stunted waveform editor; the reverb sounded phasy; and exporting sound names to MIDI sequencers was a difficult task. Still, it offered so many other advantages that a lot of people (including us) stuck with it.

Now we're reaping the reward. In version 2.0.1, you get 300MB of updated sounds. Uneven tone and unrealistic envelopes still mar the General MIDI bank, but its warm new Grand Piano preset spanked the one in our $1,300 hardware GM synth. DS-1 now offers a crisp collection of percussion derived from BitHeadz's Steve Reid disc (see "Let Us Play," left). Although we still found the online help negligible, the rewritten manual gets you up and running faster.

The reverb is better in version 2, but it's still gritty; for serious ambience, you're better off streaming the output through the effects in other programs. Fortunately, DS-1 makes this easy. Sound names now show up in OMS- and FreeMIDI-based sequencers with one click (hooray!). And the waveform editor, though it still lacks a loop-matching window, has gained real-time scrolling, time stretch, pitch shift, and the ability to slice rhythmic samples apart at the beat and map them to consecutive MIDI notes. We had great fun processing our grooves with these tools.

Another big improvement is the AltiVec optimization, which increases the number of simultaneous notes the program can play. G4 users on the BitHeadz message board report gains in polyphony of 16 to 21 percent. To exploit the greater AltiVec-enhanced polyphony, DS-1 now supports 128 MIDI channels.

Unity DS-1's new features (far more than we could cover here) are unquestionably worth the upgrade cost. The benefits of having your personal orchestra in software are stronger than ever.

—*David Battino*

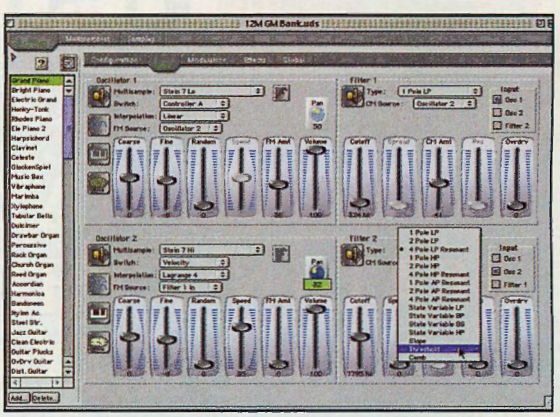
good news: Significant waveform-editor refinements. Simple patch-name sharing.
bad news: Still no pop-up help. Lacks loop-point–matching window.

www.seemebuyme.com/ma1119

Let Us Play

Remember that guy from Cheap Trick whose guitar had five necks? It's great to have options, but only if you use them. Many musicians might find Unity DS-1's enormous feature set overkill. Fortunately for those who just want to play, BitHeadz has repackaged the DS-1 technology in more streamlined and affordable programs.

Unity Player ($199) is essentially DS-1 without the editing features. For genre-specific productions, you can use programs such as Black & Whites (see *Reviews*, Mar/00, p61), Steve Reid's Global Percussion, and the upcoming Tubes, Tines & Transistors (each program costs $199). These are playback-only versions of DS-1 that come with 300MB of samples; you can also use the samples with the mother-ship program.



New options in the patch editor include time stretch, numeric input, and three new filter types.

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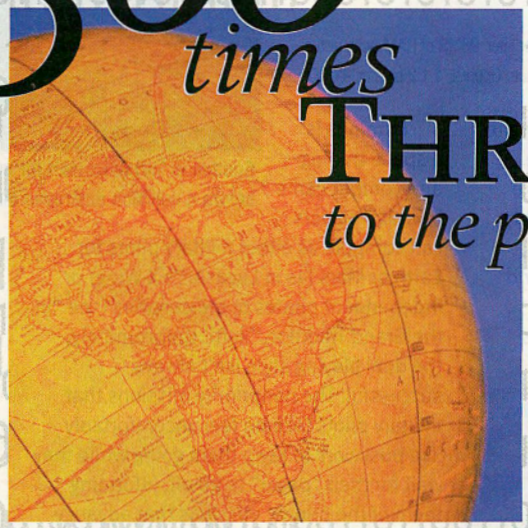

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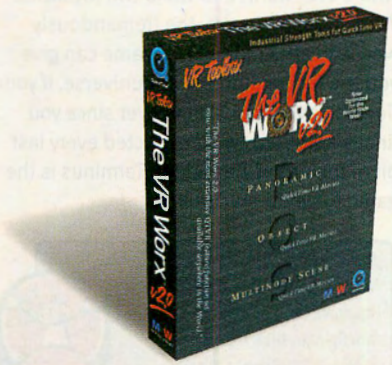

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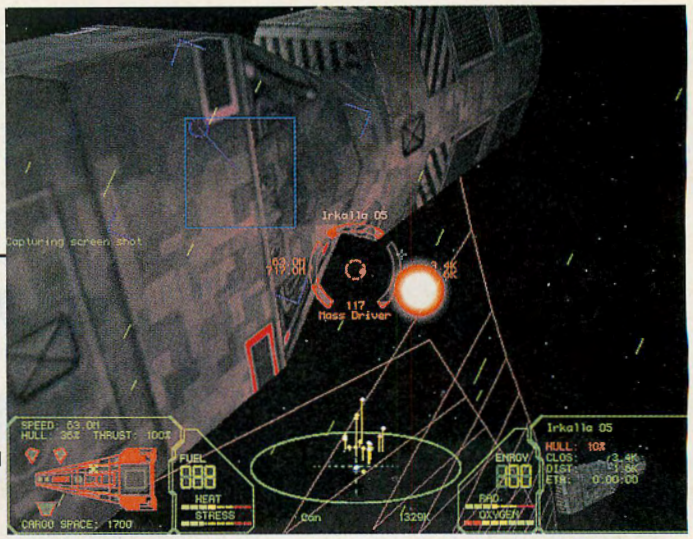
Terminus

fun & games

Company: Vicarious Visions
Contact: 518-283-4090, www.vvisions.com
Price: $49.95 (SRP)
Requirements: G3 300MHz or faster, Mac OS 8.6 or later, 96MB of RAM (with virtual memory set to 128MB), 650MB of free hard disk space, OpenGL 1.1.2 or later, 4X CD-ROM



Combat in Terminus isn't for amateurs—we took this shot about half a second before a collision destroyed both ships.

FIND A DEMO of Terminus on The Disc.

Some games are addictive from the moment you start them, while others slowly grow on you—like mold—until you find yourself inexplicably playing as the sun comes up. Terminus, Vicarious Visions' new space-trading and combat game, is of the latter variety—getting started is tough, but stopping is much, much harder.

Terminus is a space-trading and combat game in which players can compete as either military pilots for Earth or Mars (as in LucasArt's X-Wing) or independent pirates or mercenaries (see "In the Grand Tradition," left). Unfortunately, the dual playing style isn't always successful. The nonpriority missions that military pilots take on feel uncomfortably like busywork to keep them going while they wait for their "pager" to go off, informing them of the priority missions that advance the game's plot (the nonpriority missions make much more sense as paid contract work for pirates and mercenaries). The game's unremitting emphasis on real-time realism means that almost invariably you get paged when you're right in the middle of combat. The focus on real-time pays off in multiplayer mode, where multiple pilots play in the same universe.

By far the strongest element of Terminus is its first-class 3D flight engine. Terminus abandons the (inappropriate) drag-based Aristotelian premise that thrust is equivalent to speed, so would-be space fighter pilots must suddenly deal with ships that take significant amounts of time to turn, stop, or otherwise maneuver. Even the most jaded flight-sim jockeys will probably undergo a few serious collisions before they get the hang of controlling their ships. In Terminus, even the simplest maneuvers are somewhat tricky, and combat is well neigh impossible for neophytes until they get used to the idea that they're usually not traveling in the direction their ship faces. While there are limits to the accuracy of the physics model (you have to feel sorry for a pilot subjected to more than 80 Gs!), it's easily the best we've seen.

The initial version of Terminus was amazingly buggy—some missions wouldn't work (the game simply wouldn't react when you launched probes during spy missions), users could not calibrate joysticks, and occasionally the whole system would just lock up for no apparent reason. Fortunately, the developers didn't rest on their laurels; between the time we received the game and press time, the version number had gone from 1.1 to 1.62b. We still encountered the occasional bug, even with 1.62b—if you get the game, you should check Vicarious Visions' Web site for patches before you start it up for the first time. Unlike most Macintosh games, Terminus lets you use multiple controllers simultaneously—you can assign flight controls to any connected joystick, so serious gamers can play Terminus two-fisted with different ships' functions assigned to each controller. The game ran smoothly on a 500MHz G4, and we could play it on a beige 300MHz G3 once we turned down the graphic detail a bit.

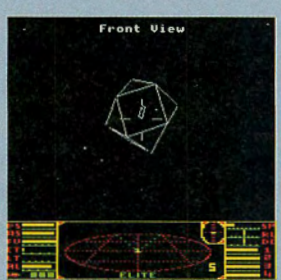
Terminus is an intermittently fantastic game that should appeal to flight-sim jockeys, hardcore sci-fi fans, and anyone who's ever wanted to wield two joysticks. With enough players, the tremendously well-executed multiplayer game can give you the feel of a populated universe. If your fingers have been itching ever since you finally admitted you'd extracted every last bit of fun out of Tie Fighter, Terminus is the game for you.—*Ian Sammis*

good news: Outstanding flight engine. Strong ship-building mechanism. Good story line. Multiple joystick support.
bad news: Priority missions mechanism is annoying in single-player games. Some bugs.

www.seemebuyme.com/ma1109

In the Grand Tradition

Like nearly every other space-trading game that has shipped in the last 16 years, Terminus draws heavily upon the 1984 classic, Elite. This game by Ian Bell and David Braben was years ahead of its time. It implemented a 3D combat system on a 6502-based BBC Micro platform. Compare these two shots, and you'll see that even now, more than a decade later, Elite's effect on the genre is still unmistakable.



Here we have Elite, a 1984 game. The station in front of the ship is Lave, where all new pilots start out...

...and here we have Terminus. See any similarities?

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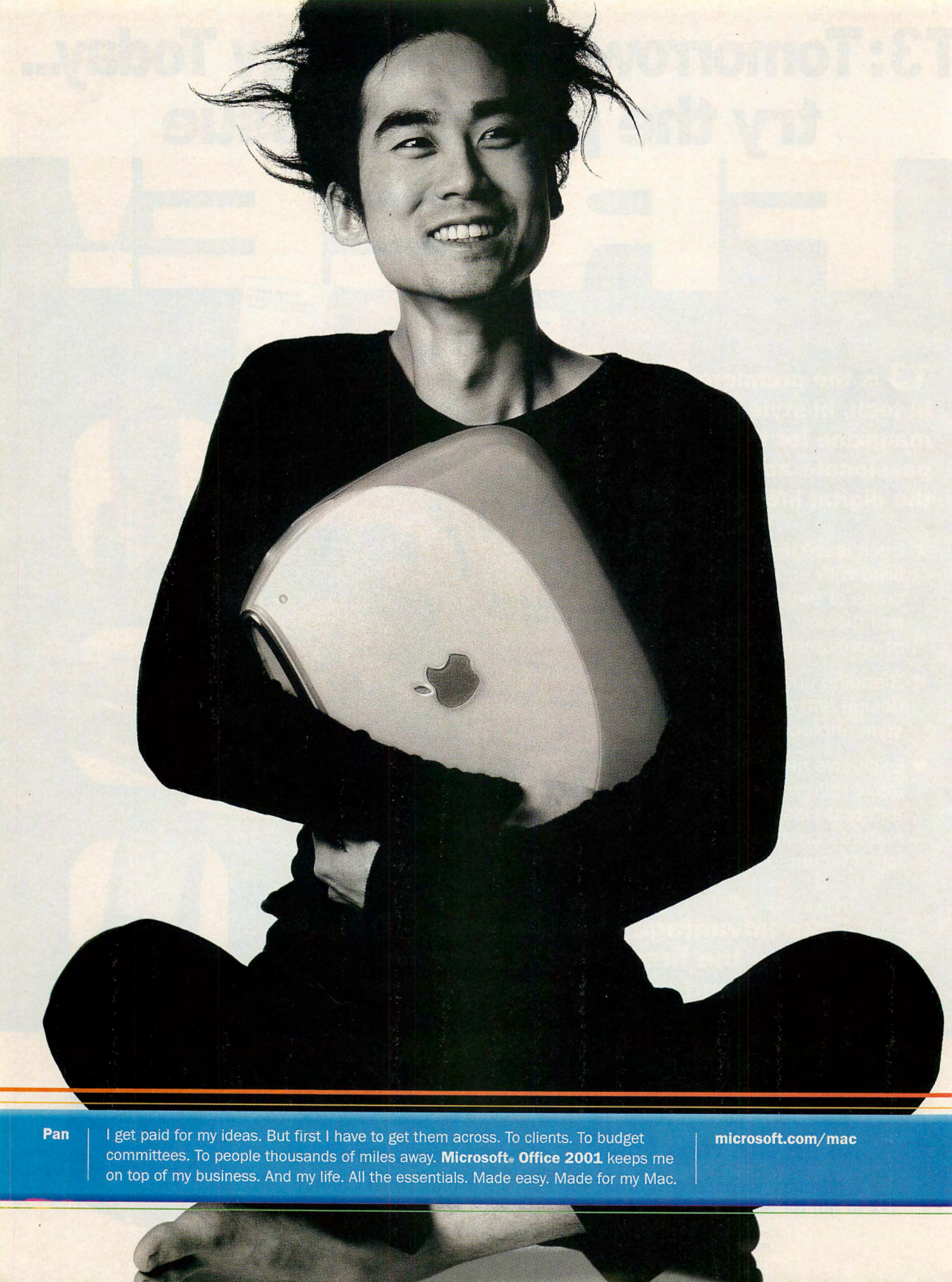
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Microsoft

Filter Images with QuickTime Pro

by Sabrina Zerkus Smith

EASY

TOUGH

This stuff's for the pros.

TRICKY

It'll take some effort, but you can do it.

EASY

The fundamentals, if you will.

Having fun with filters? Come tell us about the results at www.macaddict.com/debate.

WHAT YOU'LL NEED

- **QuickTime Pro (www.apple.com/quicktime)**
- **Images you want to edit**

ILLUSTRATION BY MATTHEW J. BAEK

So you want to do a little photo work. Maybe you want to upload a photo with text to make a Christmas e-card, or make a sepia tone of that picture of your dog to put on your desk. But we, er...*you* spent all your money on a vacation to Dollywood, so you can't afford to shell out $599 for Photoshop. What do you do? Use QuickTime Pro!

QuickTime Pro, unlike most other good shareware programs, has a wide array of cool effects already built in, such as Emboss, Edge Detection, and Lens Flare. QuickTime can't compete with Photoshop for professional results, but it's a workable substitute for the average underfunded Mac user. (And at $30, you can't beat it for fiscal responsibility.)

There are a few important things to remember when working in QuickTime Pro. First, Apple intended QuickTime for video, not still images, so it uses a slightly different language (pretend you're in England). Next, you have to save and rename your document after *every* step. This is mandatory and sometimes tedious, but the results are worth the effort.

Now that you've heard the warnings, let's get to filtering!

1 Crank It Up

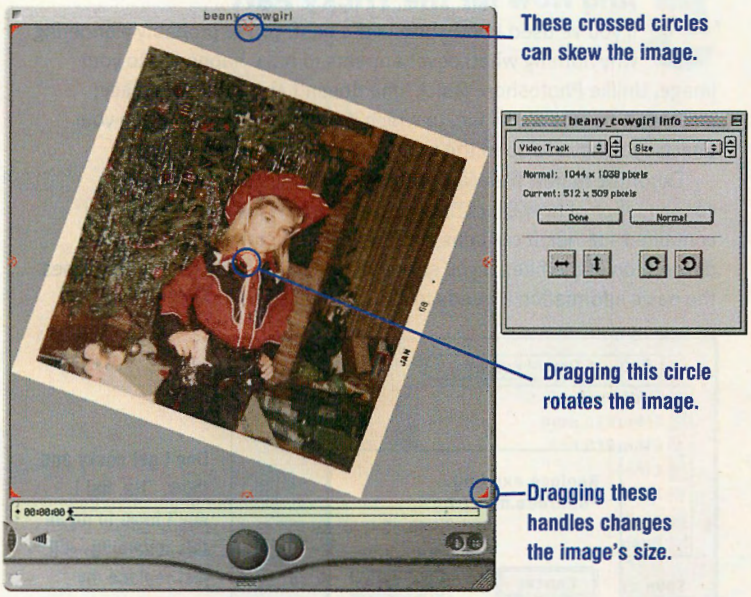
Open the QuickTime Pro player and import your photo by choosing Import from the File menu. Notice that the button usually labeled Open is labeled Convert—you're not just opening your image, you're also turning it into a QuickTime movie so the QuickTime player can work on it. When you click Convert, your image should appear in a new QuickTime player window. If the image is large, it'll exceed the screen's dimensions—to reduce its size, choose Fill Screen from the Movie menu, then grab the lower right handle of the player window and drag to resize.

Click Convert to open your picture, and QuickTime will change your picture into a "movie." Don't worry—you're still working on a still image.

2 Twist and Shout

There are two main ways to edit images in QuickTime Pro—alter the image's properties in the Get Info window or apply filters to the image as you export it. We'll look at both, starting with the Get Info window.

Open the Get Info window by choosing Get Info from the Movie menu. You should see two pop-up menus: one labeled Movie on the left, and another labeled Annotations on the right. The left menu lets you choose the tracks (such as video or text) that make up your movie, while the menu on the right lets you set the properties of each track. Choose Video Track from the left menu and Size from the right menu. Now you can manipulate your image. If all you want to do is flip it or rotate it by 90-degree increments, just click the arrow buttons. If you want to skew, rotate, and resize the movie freely, click Adjust. Red handles should then appear on your image—these let you fold, spindle, and mutilate your image. Don't like what you see? Click Normal to return to the original. When you get the image into a form you like, choose Save As from the File Menu and select Make Movie Self-Contained (see "Customs," p76).



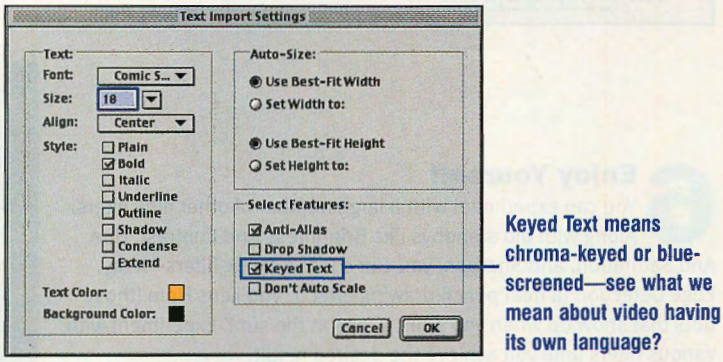
In the Get Info window, you can rotate, skew, and flip your image.

3 Say It, Baby

To add a text caption to your image, first open SimpleText, type your message, and save it to a file. Open a *new* QuickTime player window (Command-N) and import the text file, just as you did for your image. Before you save the image, click Options in the Import window to set the color, size, and style of the text. Also check Anti-Alias to make the text less jagged and Keyed Text to make it appear without a colored background. Save the imported text and it will appear in the new Player window.

Copy the text from this window and bring your image to the front. Hold down Option-Shift and click the Edit menu. Where you would usually see Paste, you should now see Add Scaled. Choose this option to add your text caption to the movie.

You've got a problem, though—the text is stuck in the top left corner of the window. To place your text, choose Text Track from the left pop-up menu, Size from the right pop-up menu, click Adjust, and move the text where you want. Then save the image.

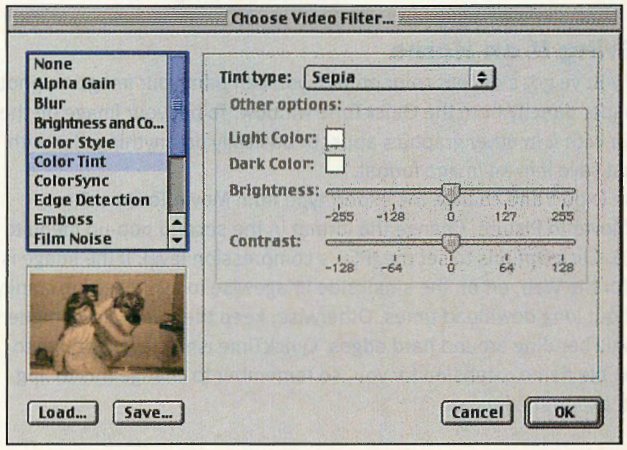


Clicking the Options button in the Import window brings up this dialog box, where you can set the size, style, and color of the imported text.

4 Color Me Happy

Now that you've resized and labeled your image, it's time to get more ambitious and apply a filter to it. QuickTime applies filters to movies as it exports them, so start by choosing Export from the File menu. A somewhat familiar-looking Save dialog box appears, but it includes a few extra buttons and controls. Choose Movie To QuickTime Movie from the pop-up menu, then click the Options button.

Clicking Options brings up a new dialog box where you can make changes to the movie as you export it. To start, click Settings and choose Millions Of Colors and Best Quality. Click OK, then click the Filters button to see the large number of filters QuickTime can apply. Choose Color Tint, Sepia. Click OK, then go ahead and export your image. *Make sure* you give the exported file a different name from the original. Don't overwrite it, or you'll be in trouble.

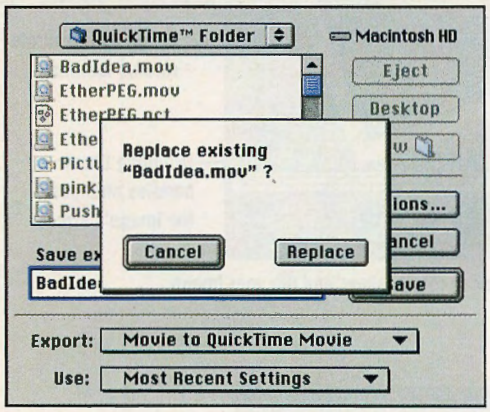


Here, we chose Sepia under the Color Tint filter. Click OK as prompted.

5 And Now for the Tricky Part

If you've used Photoshop in the past, you're probably wondering why nothing whatsoever appears to have happened to your image. Unlike Photoshop, QuickTime doesn't apply filters in place; instead, it creates a *new* file, to which it applies the filter. To see your effects, you have to open the new file you've just created.

Exporting to new files can get tedious, but it's a necessary consequence of how QuickTime works. The new movie isn't self-contained—rather, it contains a reference to the original movie and a description of the filter. If you save over the original file, QuickTime loses the basic information it needs to render the filtered image!



Don't get cocky and think, "Ha, ha! I don't have to do all this renaming—I'll just replace my original document." If you do, QuickTime has no reference photo to continue working from.

Customs: How Importing and Exporting Works in QuickTime

QuickTime deals with movies, not images. When you bring a picture into QuickTime to work on, you're importing it, not opening it—the result is a single-frame QuickTime movie containing your image. Similarly, QuickTime doesn't apply filters to a movie in the traditional sense—instead, it lets you create a new movie that incorporates the filter's effects.

Normally, when you make changes to a QuickTime movie, QuickTime doesn't create an entirely new movie—instead, it creates a little file that describes the changes and refers back to the original movie. This means if you don't click the Self-Contained Movie option when you save your changes, your new "movie" won't open unless you have the original document in the same place as the new document. If you're uploading your Christmas e-card to the Web, for example, you'd have to upload both files (not just your completed one) to let people see it. Anytime you plan to distribute your final result, you should click the Self-Contained Movie option when you've finished editing the image.

6 Enjoy Yourself

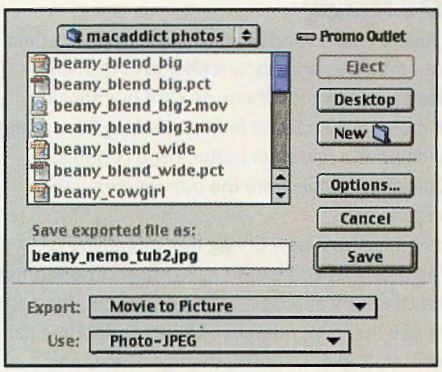
You can experiment with a large number of other nifty filters. Along with old standbys like Brightness And Contrast, Hue And Saturation, and Sharpen, you can choose exotic filters—X-ray, Edge Detection (a neat pencil-drawing effect), and Lens Flare (those dots that show up when you point a lens at the sun). Experiment with various filters until you achieve the desired result.

We aged this photo by first applying Edge Detection (with Thickness set to 2), then adding a sepia tone.

7 Bring It on Home

If you've got a decent color printer, you can print your image on photo paper directly from the QuickTime window. To put your image on the Web, tinker with it in other graphics apps, or basically do anything else with it, you must save it in an image format.

Choose Export and change the export type from Movie To QuickTime Movie to Movie To Picture. Change the format in the second pop-up menu to Photo-JPEG. Click Options to set the JPEG's compression level. If the image is destined for the Web, err on the small side imagewise to avoid getting cranky e-mails about long download times. Otherwise, keep the quality level higher to avoid ugly banding around hard edges. QuickTime isn't clever enough to change the file name extension for you, so remember to change this to .jpg before you export the image.



Remember to change the document suffix manually to .jpg when you export Photo-JPEG images.

Sebrina Zerkus Smith is an art director and co-owner of Promo-Outlet, a Los Angeles–based entertainment marketing company. She hopes to be a writer when she grows up.

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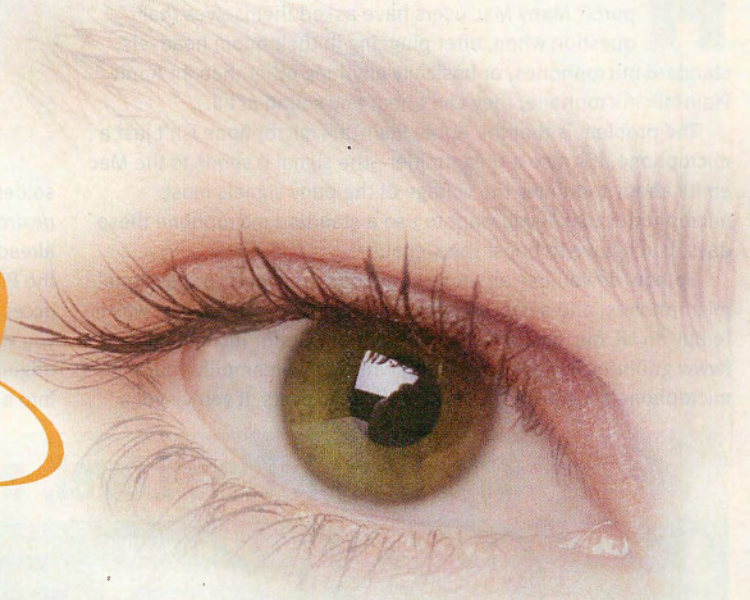

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QuickTime™

Mac

Use a Standard Microphone with the Mac

by Ian Sammis

TOUGH

WHAT YOU'LL NEED

- A PlainTalk microphone you never want to see again
- A 1/8-inch stereo minijack (the open-circuit type)
- Soldering equipment (including solder, a soldering iron or gun, and wire cutters)
- A project case (at least 3 by 2 by 1 inch) and a drill with a 1/2-inch bit
- A cutting tool that can cut the project case (we used a hacksaw blade)
- A small Phillips head screwdriver

PHOTOGRAPH BY IAN SAMMIS

This adapter started its life as a PlainTalk microphone.

How is our microphone port unlike all other microphone ports? Many Mac users have asked themselves that question when, after plugging in their boom headsets, standard microphones, or basically anything other than an Apple PlainTalk microphone, they can't hear any sound at all.

The problem is that the Apple PlainTalk microphone isn't just a microphone, it's also a preamplifier—the signal it sends to the Mac emits about 100 times the voltage of the puny signals most microphones use. If you want to use a standard microphone these days, you'll have to boost the signal.

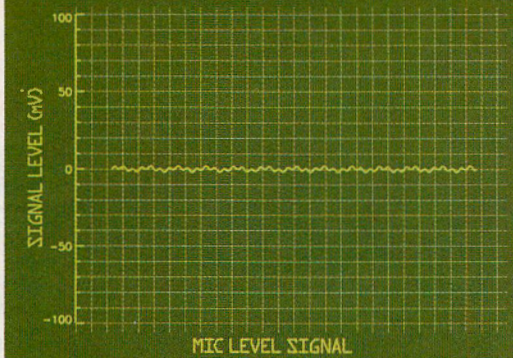
So how do you use all those cool boom headsets, professional microphones, and secret wiretaps with the Mac? The easiest way is to buy an NE Mic microphone adapter from Griffin Technology (www.griffintechnology.com, $20), which will preamplify your microphone's signal to the level the Mac expects. If you've got a soldering iron and nerves of steel, however, you can modify (read *destroy*) a PlainTalk microphone—an item you probably have already—and create a standard microphone port. This port will use the PlainTalk microphone's preamplifier to render the signal acceptable to your Mac. This procedure isn't for the faint of heart—you will *never* be able to return your PlainTalk microphone to its original state. For the brave, here's how to turn your microphone into an adapter that will let you use other microphones.

Got any other neat hardware hacks? Tell us about them at www.macaddict.com/debate.

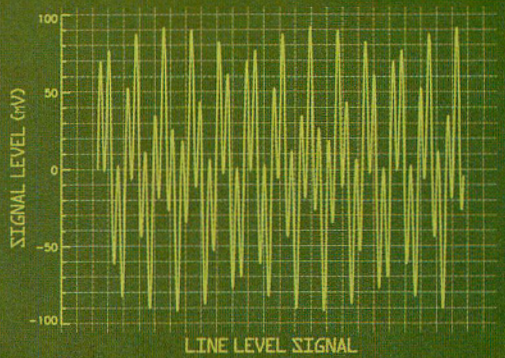
Mic Level, Line Level, and Preamplifiers

Look at the average (non-PlainTalk) microphone, and you'll notice one thing immediately—it lacks a power supply. That's because standard dynamic microphones transform the power within a sound wave directly into electrical power. Sound waves don't have too much power, though—a mic level signal is typically only a few millivolts (a thousand millivolts equal a volt).

Unfortunately for those of us with external microphones, Apple's engineers used a very unusual design for the Mac's microphone port. Unlike most such ports, it doesn't accept mic level signals. Instead of amplifying the signal inside the computer, Apple actually built an amplifier into its PlainTalk microphones (to power the amplifier, the company built an extra long microphone plug, with power supplied at the very end). This means the Mac expects a line level signal of about a tenth of a volt, not a mic level signal—and if we plug a microphone into the microphone port, we'll get nothing but ominous silence.



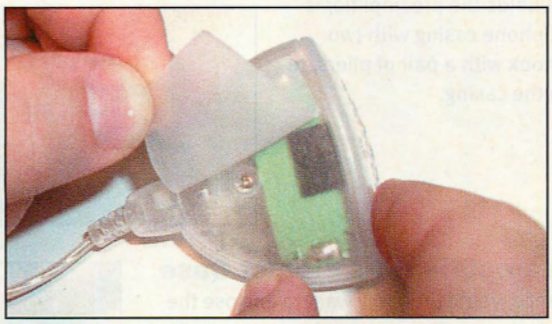
A mic level signal is only a few millivolts—much too faint for the Mac.



Once the signal is preamplified, it's strong enough for the Mac to detect.

1 Open the Case

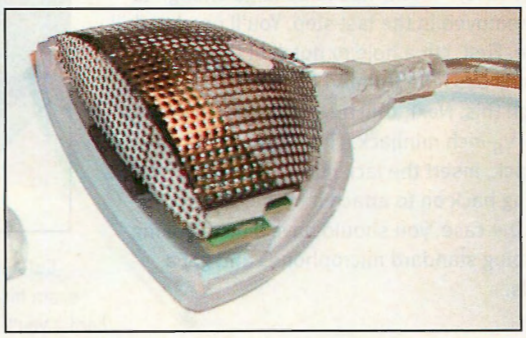
At the bottom of your PlainTalk microphone, you'll find a rubberized pad. Peel off this pad to reveal the bottom of the microphone's plastic enclosure, using a sharp knife if necessary. You should see a small Phillips-head screw on the bottom of the case—this keeps the case closed. Remove the screw and open the case. Make sure your screwdriver is small enough for the screw—if you strip it, you'll have to pry or cut the case open.



Peeling off the pad on the bottom of the microphone reveals the small Phillips-head screw holding the case together.

2 Remove the Shield

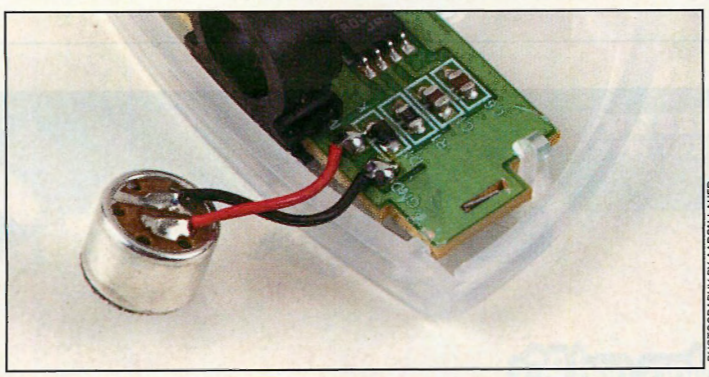
A metal shield hides the inner workings of the microphone. If you look closely, you'll see a small soldered joint holding the right side of the shield closed. Using wire cutters, cut the joint (or if you're brave, pry it open with a screwdriver), then work the rest of the case loose. You'll probably have to cut or break the other side of the case—repeatedly bending the far side back and forth to fatigue the metal should do the trick.



Using a pair of wire cutters, we can easily remove the metal shield covering the microphone's circuitry.

3 Remove the Microphone

The microphone itself is the small, round, metal device at the front of the case, connected to the circuit board by a pair of wires. Remove the microphone from its rubber casing, then unsolder the two connections on its back.



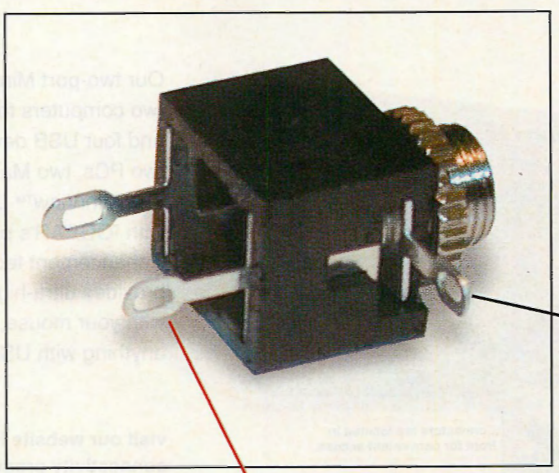
Unsolder the wires from the back of the microphone.

PHOTOGRAPHY BY AARON LAUER

4 Attach the Minijack

Now all you have to do is attach the 1/8-inch stereo minijack to the two wires you've just removed from the microphone. If you look closely at the minijack, you should see three attachment points called terminals. One of these connects to the minijack's outer case, while the other two attach to folded pieces of metal that connect with the tip and center connectors on a 1/8-inch miniplug. Solder the black wire (on some PlainTalk microphone circuit boards, it's labeled GND) to the outer terminal (called the *sleeve*), then solder the unlabeled red wire to the center terminal (called the *ring*).

At this point, it's a good idea to test your new microphone port to make sure you've done everything correctly (if you've damaged the circuit board somehow, you're stuck.) Plug a microphone into the minijack, plug the preamplifier into the Mac (it's not really a PlainTalk microphone anymore, since the actual microphone's either in the trash or sitting somewhere near your soldering iron!), and try recording a sound (remember to switch your Mac's sound input to External Mic first).



Solder the black wire to the sleeve (grounding) contact and the red wire to the ring contact.

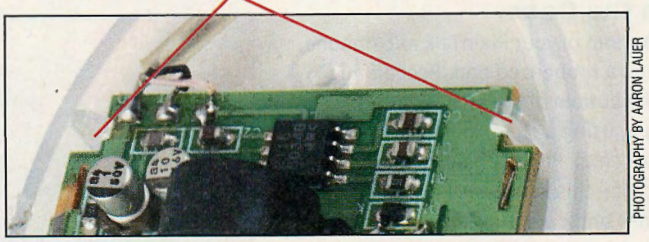
The black wire should connect to the terminal corresponding to the miniplug's sleeve.

Solder the red wire to the terminal corresponding to the minijack's ring.

5 Remove the Circuit Board

The circuit board that holds the preamplifier is attached to the microphone casing with two plastic hooks. Snap off each hook with a pair of pliers, to remove the circuit board from the casing.

Snap off these two hooks with a pair of pliers to remove the circuit board.



PHOTOGRAPHY BY AARON LAUER

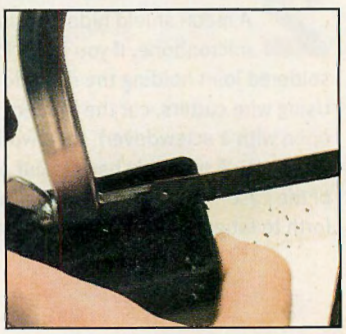
6 Install the Preamplifier in a Project Case

For the sake of elegance, you'll probably want to enclose the circuit board in a project case. The case can be pretty small (we used a 3-by-2-by-1-inch case)—it only has to be large enough to hold the circuit board you removed in the last step. You'll need to drill or cut two holes in the case. First, cut a hole or notch at the seam where the case closes—you'll pass the (former) PlainTalk microphone's cable through this. Next, drill a $^1/_4$-inch hole in the top of the case and install the $^1/_8$-inch minijack. (Typically, you unscrew a ring from the sides of the jack, insert the jack into the hole from inside the case, then screw the ring back on to attach it to the case).

Once you've closed up the case, you should have a nice-looking device into which you can plug standard microphones and get a signal the Mac understands.

Ian Sammis once got a nasty shock by sticking his thumb into a light switch.

Drill a $^1/_2$-inch hole in the case to mount the microphone minijack.



Cut a notch near the project box's seam for the PlainTalk microphone's cord—you'll attach it as you did before.

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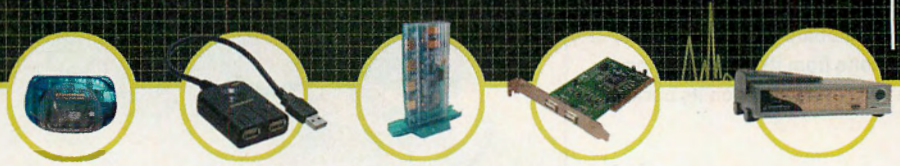

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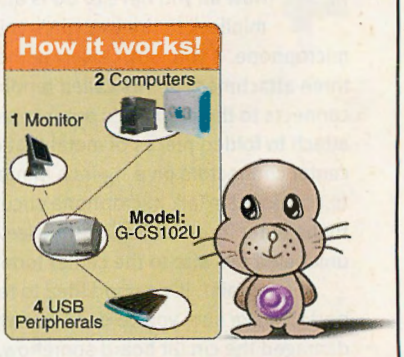

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TRICKY

Mix Music with Mixman

by Rich Pizor

WHAT YOU'LL NEED

- **Mixman Studio**

ILLUSTRATION BY AMORE HIROSUKE/ CWC-I

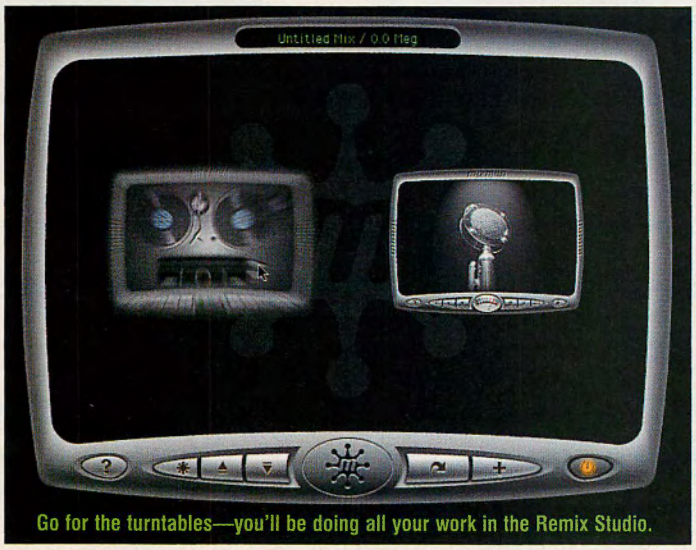
Find a demo of Mixman 1.2 on The Disc.

Got some good tunes? Come tell us at www.macaddict.com/debate.

They say everyone has at least one good song in them, but unfortunately not everyone has the time or (let's face it) the talent for full musical training. As technology progresses, however, it's getting easier for those with an ear for music to experiment with music synthesis. Beatnik Studio's Mixman Studio (www.mixman.com, $79.95 for a boxed copy or $19.95 for a downloadable version with fewer samples) can make it easy for you to create your own distinctive riffs—all you need are Mixman, the included sound samples, a good ear, and some patience.

Mixman uses a file format called TRK (track) rather than a more standard sound format like AIFF. TRK files build an extra layer of timing information into otherwise fairly straightforward sound files, allowing Mixman to keep the samples in sync by making sure they all play at the same tempo. This feature makes Mixman fairly unique—most other audio programs can't synchronize samples without changing the pitch, which distorts the music.

Mixman's TRKs come in the form of loops—short musical phrases you sequence to build a larger song. The boxed version of Mixman Studio comes with over 240MB of loops, allowing you to create millions of possible compositions right out of the box (if the provided loops aren't enough, you can get more from Beatnik's Web site or simply record your own). Here's how to mix up a tune.



Go for the turntables—you'll be doing all your work in the Remix Studio.

1 Enter the Remix Studio

When you launch Mixman, you'll see two large buttons, one with a microphone and one with a complex control panel. The microphone icon brings you into the Recording Studio, a Mixman feature that allows you to record your own sound samples. Since you'll just use the existing loops for now, click the control panel button. (The Recording Studio doesn't let you create proper TRK files with tempo information, so you wouldn't want to use it even for recording your own tracks. To see how to record your own TRK files, see "Making Your Own Loops," p84.)

This brings you into the Remix Studio, where you'll be doing all the work necessary to create your song. The Remix Studio consists of two "turntables" where you load your samples, and a few other buttons for controlling pitch, tempo, and volume.

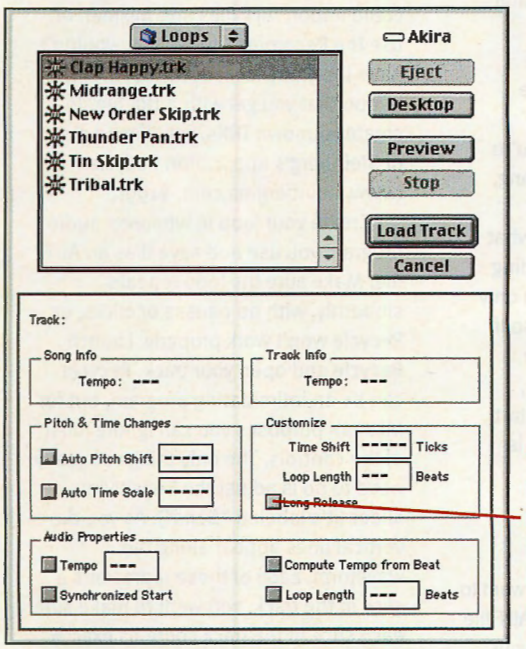
Controlling Mixman couldn't be easier—everything in this window works with just a click or two. Each control also has a keyboard equivalent, which you should try to learn—mixing is substantially easier if you use the keyboard. To see how to use the keyboard, click the help button (the one with a small question-mark icon) to pop up an overlay that shows what the various keystrokes do.

2 Sample Your Samples

Mixman lets you sequence up to 16 tracks, each of which can have its own volume and pitch. Each of the Xs around the edges of the Remix Studio turntables represents a slot for a track. To load a track, just double-click an X. Mixman should automatically go to its Tracks folder. Choose the folder that matches the style you're after, then choose a folder that contains the musical element you're looking for. Finally, you'll get a list of tracks.

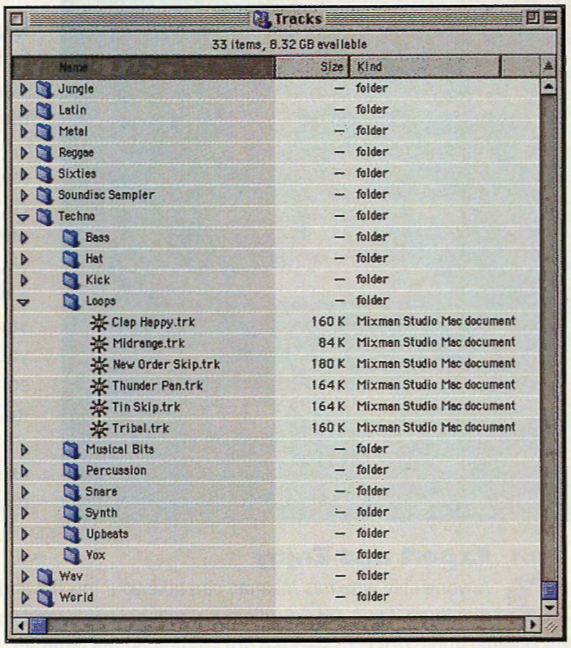
Double-click a track to start playing it, so you can hear what the track sounds like before you add it to your mix. This is called *auditioning* a track. If you like what you hear, click the Load Track button; if not, click the Stop button and audition another. It's a good idea to save your mix every time you bring in a track you think you'll keep. Once you load a track, the X for that track should become a dot.

You'll see additional controls at the bottom of the Load Track window. The only one you really need is the Long Release check box. If this box is checked, just tapping the button for that track will cause the whole loop to play. If it isn't checked, the loop will play only as long as you hold down the key for that track.



Watch out for this check box—it makes a huge difference in how you control playing of your track.

Mixman's many presets include a wide variety of genres and instruments.



3 Test the Loops

Thanks to the way you audition each track as you add it to your mix, you'll probably have a good idea of what you want your song to sound like by the time you're done loading everything in. Once you've selected your tracks, it's time to make some music.

Before you make a recording, you'll want to play around with your tracks to make sure everything is set just the way you want it. Press the Play button along the bottom of the remix window to enter Play mode. Once you're in this mode, you can play a track by pressing the corresponding key on your keyboard (press the help button to see the keyboard equivalents). A track will play until you release the key (or mouse button) unless you imported it with Long Release selected.

With 16 tracks but only ten fingers, you'll need to lock a few tracks to get them all playing at once. A locked track keeps playing until you either unlock it or press the Silence key, which stops all sound until you release it. To lock a track, either click it with the mouse or start playing it, then press the space bar before you release its key. The track should turn green, indicating that it's locked.

The orange tracks will stop when you let go of the keys, but the green ones will play on.

With macros, you can abruptly change which loops are playing with a single keystroke.

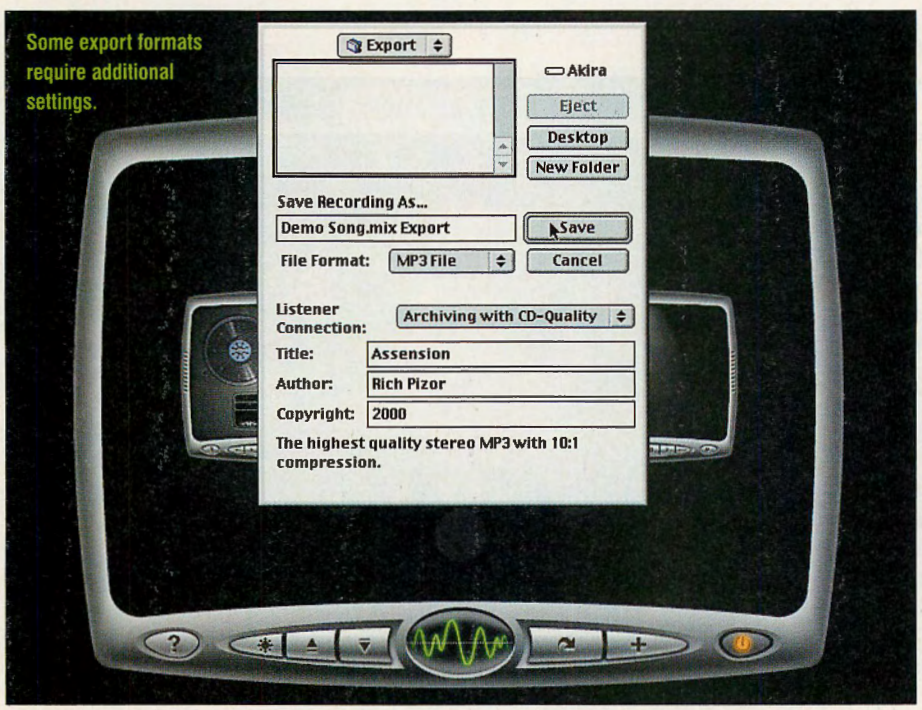
4 Set Your Macros and Record

If your song has a lot of complicated bridges or transitions, you may feel like an octopus, as you try to press six or eight keys at once. To get around this, you can create macros (snapshots of the turntables in a particular state). To store a macro, lock the tracks you want to assign to the macro, then hold down the Shift key and press one of the F-keys from F1 to F8. To start playing the macro, just press the appropriate function key.

Once your macros are set, you're ready to record. To record your song, click the Record button and start playing. Mixman will remember what you do, and will store your recording when you save your mix. You can only save one recording per mix file, so if you want to make more than one song from the same set of tracks, make sure you save before you start a new recording (Mixman's Save is like the Save As in nearly every other application).

5 Export and Enjoy

Anyone else who has Mixman can take your mix file and listen to your music, but if you want to distribute it to a wider audience, you'll have to export your mix. You can export it as an AIFF file (for burning audio CDs), an MP3 file (for sharing on the Internet), or a RealPlayer file (to add it to your Web page). To export your mix, just make a recording, then go back to the main screen (press the U-turn button) and click the export button (the one with a curvy arrow). Choose your format, then click Save.

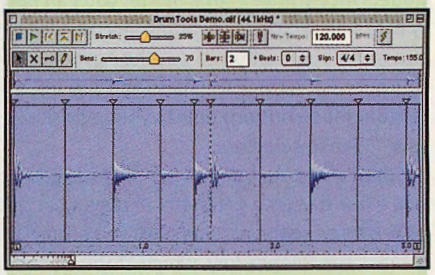


Making Your Own Loops

If you're at all musically inclined, you'll eventually want to create your own loops instead of relying upon those supplied by Beatnik. While you could import AIFF files into Mixman or use the Recording Studio, you wouldn't have the same level of control over the tempo that you get with a TRK file. To create your own TRKs, you'll need a copy of Steinberg's application ReCycle (www.steinberg-na.com, $199).

Create your loop in whatever audio program you use and save it as an AIFF file. Make sure the loop repeats smoothly, with no pauses or clicks, or Recycle won't work properly. Launch Recycle and open your track. Recycle can be an intimidating program, but for Mixman purposes you can ignore most of the controls. The only thing you really need to do is adjust the Sensitivity slider (it's labeled "Sens"). As you do, vertical lines appear along the waveform. Each of these represents a *slice* in the track. You want to make sure each slice in the track contains exactly one sound. Choose the number of bars you want the sample to take up; Recycle will calculate the number of beats per minute automatically.

Finally, make sure you've unchecked all the menu items after the divider in the Sampler menu. Then choose Mixman TRK File at the bottom of that menu. Pull down the Sampler menu again, and you should see that the first command has become Export As Mixman TRK File. Choose this option, and you'll have a brand-new TRK file you can import into Mixman.



With Recycle, you don't have to use the same TRKs as everyone else.

Rich Pizor is Editor of MacAddict.com.

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Super-Sizing The Sims

Downloadable Skins Keep The Sims Interesting

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Who would *you* choose to stalk in your Sims virtual world? Discuss it at www.macaddict.com/debate.

Bored with your Sims already? You fickle gamer, you. If you can't stand the thought of building yet another Sim family with the stock set of skins, help is on the way. By downloading special files called *skins*, you can wrap your Sims in custom graphics to make them look like just about anyone—from your favorite punk rocker to Jennifer Aniston.

Adding new skins is easy—simply download the graphics files and put them in the Skins folder inside the GameData folder (which lives in your Sims folder). Of course, since most skins are designed for the PC platform, you have a couple of wrinkles to deal with. Here's how to get custom skins working on your Mac.

Step 1: Download the skins you want to use. This part's easy. Even if the file name ends in .exe, that's not a deal killer: These files are typically just PC self-extracting archives, and if you encounter one, the latest version of Stuffit Expander should open it.

Step 2: Put the skins files in the Skins folder. After you've unstuffed your skins, put them in your Skins folder as described above. If other files accompany the graphics file, they also need to go there. If the graphics files begin any of with the following prefixes, you're good to go: Boo1FA, Boo2FA, Boo4FA, Boo5FA, Boo6FA, Boo7FA, Boo8FA, Boo9FA, Bo11FA, Bo12FA, Bo22FA, Boo1MA Boo2MA, Boo3MA, Boo4MA, Boo5MA, Bo13MA, Bo14MA. The file names aren't case-sensitive, but they typically download in uppercase. Also make sure they have a .bmp extension.

Now even your Sims can Think Different.

Step 3: Figure out why some don't work. If your skin doesn't match one of the above prefixes, you'll need to do some adjusting. These skins typically come with two other files of type SKN and CMX, text files describing a custom body type. Any file name that begins with the text *xskin* should end with .skn. If it doesn't, add this extension, shortening the file name to make room for it. (The Mac file system can only handle 31-character file names.) CMX files typically come through fine—again, add the .cmx extension if necessary.

A veritable who's who of pop-culture references, The Sims Resource (wwww.thesimsresource.com) has a ton of Sim skins.

Step 4: Edit the text files. The final step is to open both the SKN and the CMX files in a text editor (unfortunately, they're sometimes too big for SimpleText), and change the line of code that names the SKN and CMX files to load. In each file, look for the line referring to the old SKN file name and change it to match the new name. For example, if you changed the file name of the SKN file xskin-boo8fafit-mybaddieskin-fb to xskin-boo8fafit-mine.skn, you should change the corresponding line in both the SKN file and the CMX file to reflect that new name.

Step 5: Enjoy. You're in flavor country now. Launch The Sims and pick your brand-new Sim skins.—*DR*

TIP Visit The Sims for the Macintosh Skin FAQ at http://insurrection.com/thesims/simsmacfaq.txt. This document has great information about getting your skins to work properly.

Here's what happens when you allow pop-culture Sims near combustibles. The Joker starts a fire...

...Joey (of *Friends* fame) tries to put the Joker out when he catches fire...

...and everyone mourns the Joker when he burns to a crisp—except Joey, who goes out for a sandwich.

GETTING THE SKINS

If you're ready to start modifying your Sims, a *ton* of sites offer skins and other mods. Here are a few worth visiting.

- The Sims Resource (www.thesimsresource.com)—With over 1,200 skins available for download, this is a killer place to start your search. Plus, the site features a Mac-specific forum.
- Mall of the Sims (www.mallofthesims.com)—Using a mall metaphor, this site has some funky skins, furniture, and other Sims accessories.
- Sims Online (www.simzonline.com)—Another big repository of Sims skins, this one also has a searchable database.
- Punks & The Sims (http://nebula.spaceports.com/~punksims)—This one's for Narasu. True punk fans will jump at the chance to have their own punk house.

You might also want to drop by these Mac-related Sims sites:

- www.simsformac.com
- http://macsims.8m.com
- www.iquebec.com/sims-pour-mac—*DR*

Mr. T's Sims Cheats

Tired of playing The Sims the honest way? Buck up, little camper—help is on the way in the form of some cheats. To invoke one, press Command-Option-Shift-C, type the cheat, and press return.—*DR*

I pity the fool who don't use these cheats!

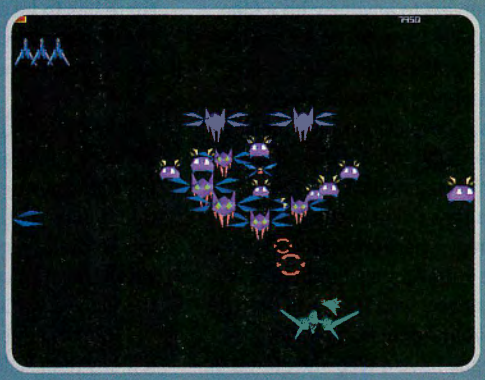
THE CHEAT	THE EFFECT
rosebud	Gives you 1000 Simoleons
sweep on	Shows a sweep display of everything happening in the game
sweep off	Hides the sweep display
tile_info on	Shows a little window with details about a selected file
tile_info off	Hides the little tile info window
interests	Shows the selected Sim's interests

Kill Some Time with Galactic Patrol

Sometimes the *last* thing you want to do is tackle the learning curve associated with many of the latest game releases—a newcomer may find Unreal Tournament pretty daunting, and *forget* about learning Terminus in an afternoon. That's why Galactic Patrol by Monkey Byte software (www.monkeybyte.com) is so refreshing. This space-based shoot-'em-up is a cross between the classic arcade games Galaga and Tempest, with nonstop action and graphics that take a flying leap into modern 3D.

In Galactic Patrol, you fly through space blasting alien spaceships and avoiding asteroids while collecting power-ups to make your ship even more butt-kicking. In the beginning, you get a sort of over-the-shoulder view, in which you're looking straight ahead into your ship's flight path. Aliens and asteroids hurtle toward you as you blast or avoid them. After you survive the requisite number of attack waves, the game's perspective shifts to an overhead view for a change of pace.

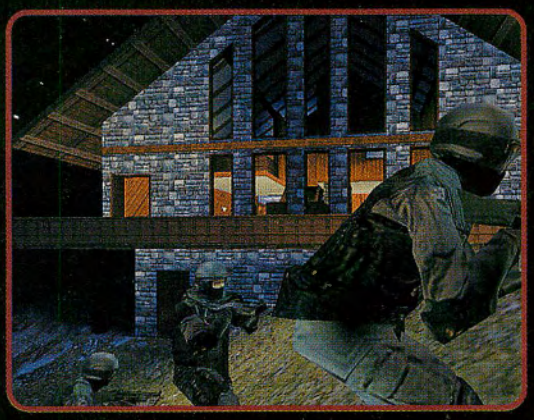
Wow—and all this for a $14.95 shareware fee. How can you resist?—*DR*



In Monkey Byte's Galactic Patrol, you jump in the cockpit of a 1980s-style space fighter, pitting yourself against the alien spacecraft that bob and weave in front of you.

Screen Shot of the Month

Mail your best gaming screen shot selections to letters@macaddict.com, and you, too, might get your moment of glory in print.



Artist's Statement

Here are some Rainbow Six shots I took for your enjoyment. They show what a 333MHz (grape) iMac can do.—*Josh "Take no prisoners" Friesen*

ask us

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Find NewNotePad II 1.9.3 and NotePad Deluxe 2.0.1 on The Disc.

Make some noise at www.macaddict.com/debate.

Q I just inherited an Apple Newton MessagePad from a coworker. It works perfectly and has some cool software already installed. Unfortunately, I have none of the original software or manuals. How can I find out more about this cool little device?

A A moment of silence for the passing of a dear friend, the Newton. This wonderful little precursor to the Palm Pilot holds a special place in the hearts of many a Mac addict. Introduced in 1993, the Newton initially took a beating due to its poor handwriting recognition (this even led to an unflattering parody of the Newton on *The Simpsons*). As the Newton MessagePad continued its evolution through a number of models, it soon gained a large following. When Steve Jobs regained leadership of Apple in 1997, he quickly discontinued development on the Newton and pronounced it dead.

However, a rabid following of Newton-heads refuses to get rid of their pads, and the plucky devices still command top dollar today—especially that pinnacle of Newton-ness, the Apple MessagePad 2000. The Internet, as always, offers lots of info and software. The new Newton user will find the Newton Cage (www.chuma.org/newton/ncage) especially helpful. This site maintains links to just about any Newton software users could need, for both the Mac and the Newton itself. Another handy resource is the Newton Info Library (http://newted.dyndns.org/users/alien), which maintains links to tons of relevant Apple Tech Info Library articles. Enjoy your Newton, and consider yourself part of a classic user group!

PHOTOGRAPH BY W.B. JONES

This cool little device is the Apple Newton MessagePad. If you want one, you'll have to pick it up used—Apple discontinued it in 1997.

Q Apple's iTools are great. My favorite thing about them is the fact that I can store my homemade QuickTime movies on an iDisk. I have a Web site running on a different server and would like to link the movies on my iDisk to it—problem is, I can't figure out the URL for my Movies folder. Do you know the correct URLs for these folders?

A Via iDisk, Apple gives 20MB of storage on its servers to anyone with a Mac running Mac OS 9. Just sign up for the iTools service (www.apple.com/itools) and use the storage for whatever you want: documents, files, pictures, or even QuickTime movies. If 20MB is not enough, Apple will sell you up to 400MB for what amounts to $1 per megabyte. Apple's iTools includes a HomePage area, where you can create your own Web site with Apple's templates. Any pictures you put on your iDisk will then be available on your Apple HomePage.

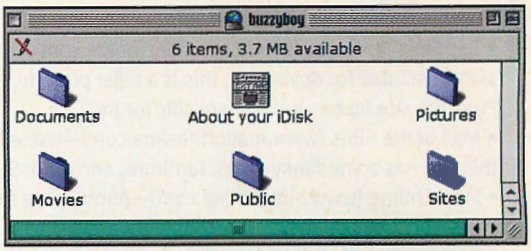
If you already have a Web site stored on another service, you can access any file on your iDisk by linking to the proper URL. Each iDisk comes preconfigured with five standard folders (Documents, Public, Pictures, Movies, and Sites). The URLs you'll need to link to these folders on your iDisk are as follows:

Documents—http://homepage.mac.com/username/.Documents

Movies—http://homepage.mac.com/username/.Movies

Public—http://homepage.mac.com/username/.Public

Pictures—http://homepage.mac.com/username/.Pictures



Store items on your iDisk and link to them from another Web site. All you need to know is the right URL!

Sites—http://homepage.mac.com/username/.Sites

Use these URLs to link to files in the folders. Apple's service does not allow directory listing, so you need to know the exact path to the file you want (a QuickTime movie, for example). So if you had a movie file in your Movies folder called movie.mov, the full URL for that movie would be http://homepage.mac.com/username/.Movies/movie.mov.

Q When I have lots of windows open and need to see the desktop, it is a major pain to move all the windows out of the way. I know I can always hide the program from the Application menu, but there has to be an easier way to make all the windows disappear quickly. How can I hide my windows?

A Any serious Mac user runs into this catch-22 often. The Mac OS lets you put files anywhere you want—and truth be told, many of us litter our desktops with lots of them. A problem arises, however, when the application you are using hides the file you want to access quickly.

There is a nice little keyboard trick to remedy this: Hold down the Option key while you click the desktop, and the currently active application automatically hides itself. To get back to your app, select it from the Application menu.

Q What is the difference between selecting External Mic and Sound In as input sources in the Sound control panel?

A Starting with Mac OS 8.5, Apple changed the terminology and functionality of its sound software (technically the change occurred with 8.1, but it first worked correctly with 8.5). Previously, you would have selected External Mic as a sound input option, then decided if you wanted sound to play

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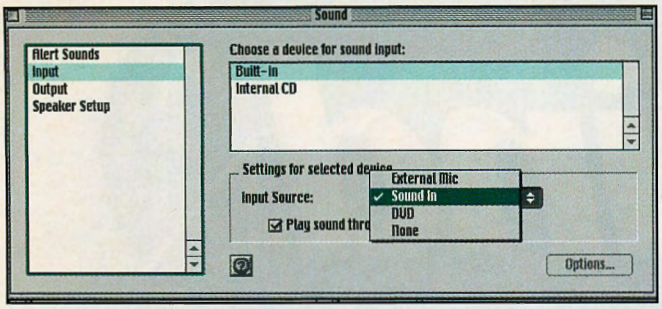


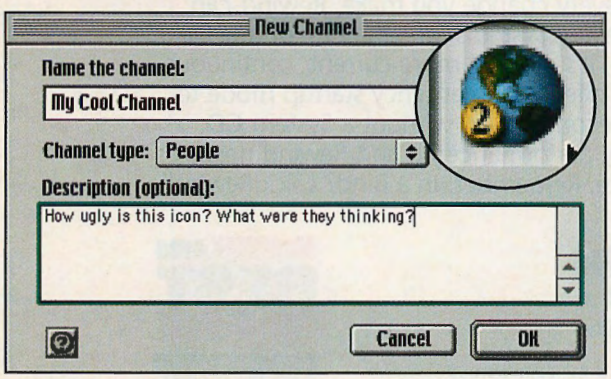
The Sound control panel in Mac OS 9 lets you choose either External Mic or Sound In—but what's the difference?

through the speakers or not at all. This led to confusion and (if you let the speaker play while using an external mike) lots of feedback—the high squeal that occurs when the sound coming out of the speakers feeds back into the microphone.

Apple fixed this problem by separating the terminology for the two functions. If you choose Sound In, the audio source will also play through your computer's speakers. This is so you could, say, connect your home stereo to your computer's sound input jack and hear it through the speakers. However, if you choose External Mic, the sound will not play through the speakers. This is to prevent feedback when the input source is a microphone.

Q I use Sherlock a lot and have even created my own custom Sherlock Channel. I don't like the choices I have for icons, though. How do I put a custom icon into Sherlock so it really stands out in the window?

A Sherlock is a wonderful tool that many Mac users take for granted. One of its most underused features may be its customization tools—you can create your own channel and put your own search sites in it. Simply select New Channel from the Channel menu and start creating.



Apple may be renowned for its design genius, but these icons really stink.

You can find information on how to create channels in the Mac OS's built-in help system under the Help menu, or on Apple's Sherlock Web site (www.apple.com/sherlock). And yes, you can even choose a custom icon for your new channel: In the New Channel dialog box, make your choice from the handy Icon pull-down menu.

The problem is that many of these choices are pretty unattractive, and some are downright ugly. Luckily, the Mac OS and its drag-and-drop capabilities make it a snap to fix this problem. Simply drag any file with a custom icon onto one of the ugly little icons in the Icon pull-down menu, and you've got your new icon. You can also use any folder that has an icon pasted onto it, or you can download icons from various sites on the Web, such as The Iconfactory (www.iconfactory.com).

Unfortunately, there's no way to customize the built-in Apple Channel icons without some pretty serious ResEdit work. Even then, it's still fairly difficult. Apple doesn't seem to want us changing its icons.

Q One of my family's favorite Web sites is Apple's QuickTime movie trailer site, where we can see trailers and previews of almost every current movie. I have recently started to create movies with iMovie, and I want to post them on the Web. Apple's QuickTime site has a feature I would like to use: The pages show a picture labeled Click Here To Play, and when you click the picture, the movie loads and plays right there, in the same window. How does this work?

A All of the clips in Apple's QuickTime (www.apple.com/quicktime) trailer pages use a QuickTime capability called Poster Movies. A small QuickTime movie consisting of one frame loads. When you click that movie, a full, multiframe movie loads in the same frame in your browser window. This lets a Webmaster create pages with lots of movie placeholders (multiple full movies would require a horrendous amount of download time).

So how does a Webmaster do this? The secret lies in creating the initial placeholder movie, called the Poster Movie—basically just a one-frame QuickTime movie marked with Click Here To Play Movie text. To create this single-frame movie, you need QuickTime Pro (www.apple.com/quicktime, $30). Using QuickTime Pro, import a graphic the same size as the movie it will link to. Then save the graphic as a self-contained QuickTime movie. The next step is to create HTML that loads the Poster Movie and links to the full movie, using special tags. Here's the code:

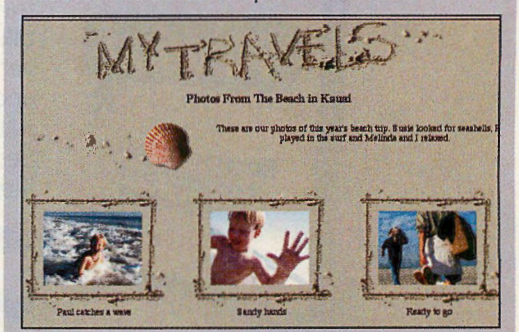
```
<embed src="http://domain.com/yourpostermovie.mov" PLUGINSPAGE="http://www.apple.com/quicktime/download/indext.html" WIDTH=240 HEIGHT=196 CONTROLLER=false LOOP=false AUTOPLAY=true href="http://domain.com/yourbigmovie.mov" target=myself bgcolor=FFFFFF border=0></embed>
```

The height and width specifications in the script will be the size of your Poster Movie, and the URL path specification will be your own movie's URL. Apple has a nice tutorial about Poster Movies on its QuickTime developer pages (http://developer.apple.com/quicktime).

Buz Zoller is a technology support specialist for a school district in Texas.

Expo Revisited

Wanna see what Steve was talking about at Macworld NY 2000 when he was showing off iTools? You can take a look at his HomePage at http://homepage.mac.com/steve. He even has a resume up there!



I don't know Stevie, this may have been easy but it's pretty cheesy.

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UMAX PowerLook 2100XL	2,199.95
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Model	Price
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APC Surge Station Pro 8 w/ 2 Tel	37.95
APC Net 8 Surge Station	33.95
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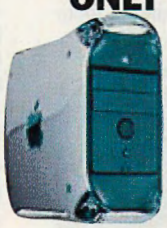

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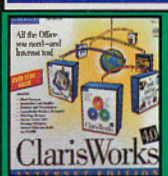

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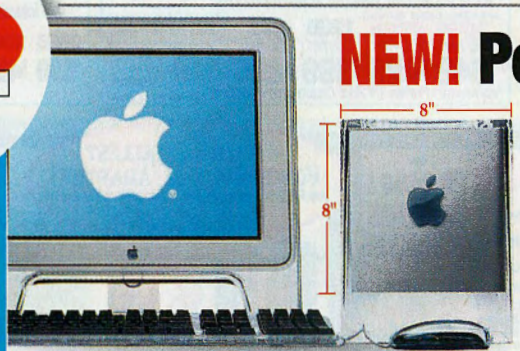

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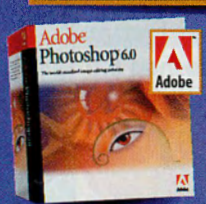

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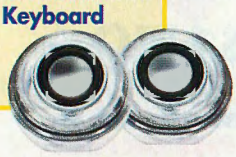

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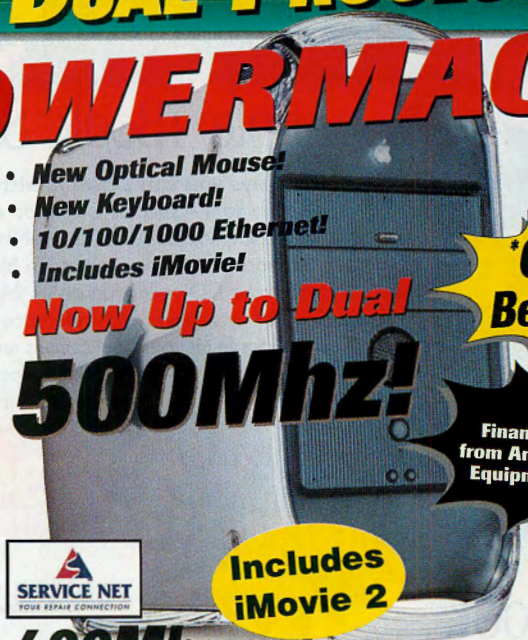

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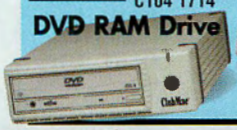

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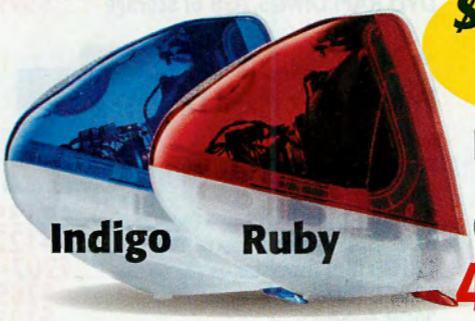

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• EXABYTE 8mm DAT •			
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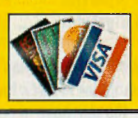

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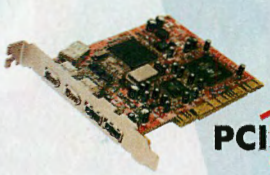

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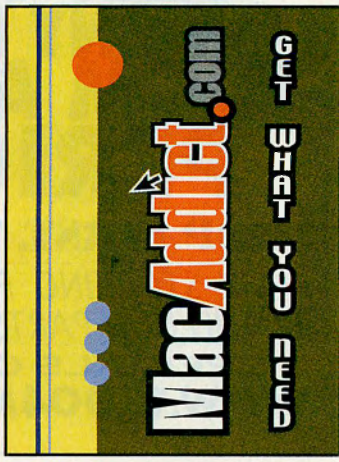

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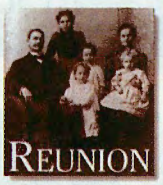

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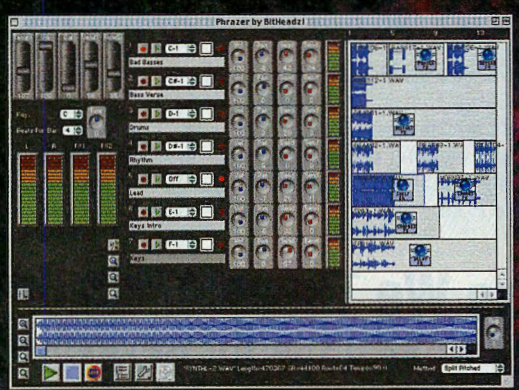

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Songs Rejected for New iMac Commercials

COURTESY OF APPLE COMPUTER, INC.

INDIGO
Purple Haze (Jimi Hendrix)
Purple Rain (Prince)

RUBY
Sunday, Bloody Sunday (U2)
Ruby Soho (Rancid)
Little Red Corvette (Prince)

SAGE
Any song by Green Day
Fantasia on Greensleeves (Ralph Vaughan Williams)
Green Acres (TV theme song)
A Little Bit of Green (Elvis Presley)

GRAPHITE
Paint It Black (Rolling Stones)
Back in Black (AC/DC)
Everything Turns Grey (Agent Orange)
Ebony and Ivory (Stevie Wonder)

SNOW
White Wedding (Billy Idol)
Whiter Shade of Pale (Annie Lennox)
Ebony and Ivory (Stevie Wonder)

Unclear on the Meaning of the Word Ultimate

"And now we have the ultimate system."
–Bruce Chizen, president of Adobe Systems, explaining why there is no need to develop any future computer systems following introduction of the multiprocessor G4 during Macworld Expo.

"The new ultimate iMac."
–Steve Jobs, during the same Macworld Expo keynote, showcasing the successor to the old ultimate iMac (now just a penultimate iMac), the iMac DV SE.

Tidal Wave of Titles

In an attempt to please everyone (and consequently overload a pop-up menu), United Airlines has included almost every title known to humankind on its Mileage Plus registration page, including not only the Mr. and Ms. standbys, but also such power packers as Brigadier General, Cardinal, and Swami. To view the complete list (and the equally amazing list of suffixes), go to www.ual.com, click the Mileage Plus tab, and then go to the registration page.

News We Thought We Read Somewhere...

Apple Sues Jobs for Revealing G4 Cube

CUPERTINO—On the heels of suing up to 25 unknown people for revealing trade secrets on a Yahoo Web site, Apple Computer filed suit against CEO Steve Jobs for revealing details about the G4 Cube during his Macworld Expo keynote speech in July.

"It's unconscionable, really," said one Apple executive who requested anonymity. "We work for years to create this great new hardware, and Jobs goes out there and spills it in front of thousands of people. Hey, uh, you're not going to print this, are you? I mean, I could lose my job."

Apple is currently considering filing suit against the company's chief financial officer, Fred Anderson, for revealing at a financial results press conference that the company had made a profit during the last fiscal quarter.

Top 5 Things the G4 Cube Is Mistaken For

- A Brita water filter
- A Rubik's cube for really dumb people
- A lawsuit generator
- A Lego block
- The musical artist Ice Cube

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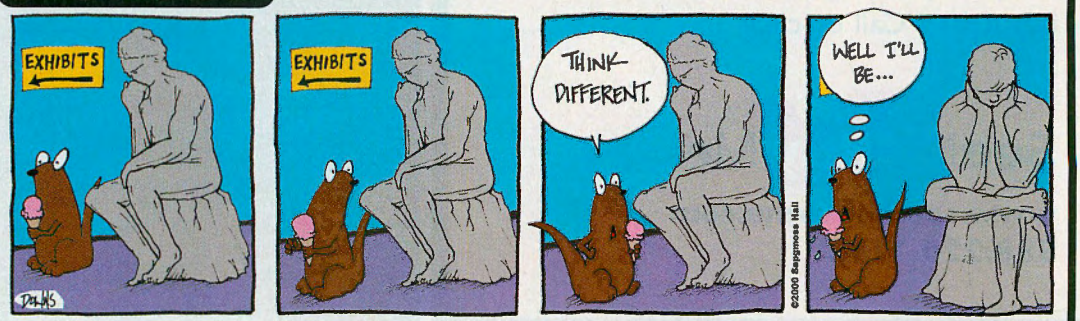

Visit the Fitzpatrick archive at http://www.insanely-great.com/comic/index.html.

BY CHUCK DOWNS

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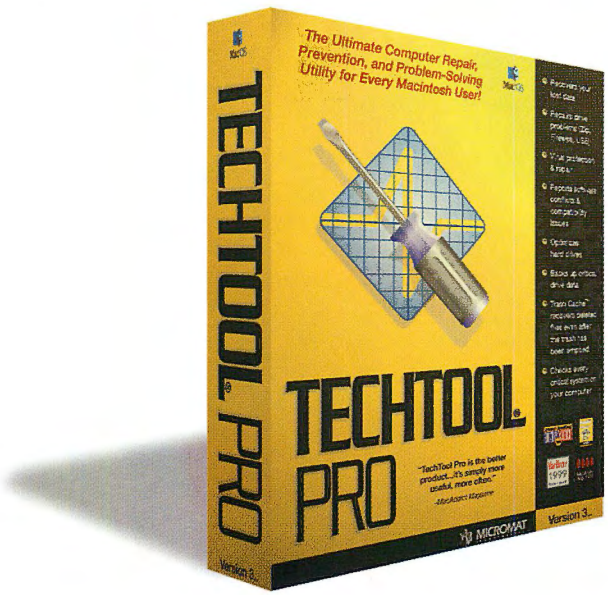

Micromat's disk repair and Macintosh troubleshooting utility just became a whole lot better. Besides repairing drives, recovering data and checking the health of your Macintosh components, TechTool Pro 3 can now help protect you against virus problems and software conflicts. Version 3 also sports a new modern interface. But the real power of TechTool Pro 3 isn't in the features you can see, it's in the features you can't see. Like a multitude of new drive repair routines that can save data that other utilities would simply abandon. An improved recovery system that will find lost files in the darkest caverns of a damaged drive. You'll also find improved performance on key features like disk optimization. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting utility available for your computer. Why settle for anything less?

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